

## CHECKLIST TO DESIGNATE AREAS OF EVALUATION FOR REQUESTS FOR PROPOSAL (RFP)

MDOT PROJECT MANAGER <b>Matt Chynoweth</b>			JOB NUMBER (JN) 76902, 79531, 79532, 79535	CONTROL SECTION (CS) 82192, 82193
DESCRIPTION IF NO JN/CS M-39 mill & resurface, mainline joint and pavement repairs. Rehabilitation of 16 bridges over M-39.				
<b>MDOT PROJECT MANAGER:</b> Check all items to be included in RFP.  WHITE = REQUIRED GRAY SHADING = OPTIONAL			<b>CONSULTANT:</b> Provide only checked items below in proposal.	
Check the appropriate Tier in the box below				
<input type="checkbox"/> <b>TIER I</b> (\$25,000-\$99,999)	<input type="checkbox"/> <b>TIER II</b> (\$100,000-\$250,000)	<input checked="" type="checkbox"/> <b>TIER III</b> (>\$250,000)		
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Understanding of Service	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Innovations</i>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>Safety Program</i>	
N/A	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Organization Chart	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Qualifications of Team	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Past Performance	
Not required as part of official RFP	Not required as part of official RFP	<input checked="" type="checkbox"/>	Quality Assurance/Quality Control	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Location. The percentage of work performed in Michigan will be used on all contracts unless the contract is for on-site inspection, then location should be scored for the on-site inspection.	
N/A	N/A	<input type="checkbox"/>	Presentation	
N/A	N/A	<input type="checkbox"/>	Technical Proposal (if Presentation is required)	
3 pages (MDOT forms not counted) <b>(No Resumes)</b>	7 pages (MDOT forms not counted)	19 pages (MDOT forms not counted)	Total maximum pages for RFP <b>not including key personnel resumes</b>	

# REQUEST FOR PROPOSAL

The Michigan Department of Transportation (MDOT) is seeking professional services for the project contained in the attached scope of services.

If your firm is interested in providing services, please indicate your interest by submitting a Proposal, Proposal/Bid Sheet or Bid Sheet as indicated below. The documents must be submitted in accordance with the latest "Consultant/Vendor Selection Guidelines for Service Contracts" and "Guideline for Completing a Low Bid Sheet(s)", if a low bid is involved as part of the selection process. **Referenced Guidelines are available on MDOT's website under Doing Business > Requests for Proposals.**

## RFP SPECIFIC INFORMATION

☒ BUREAU OF HIGHWAYS ☐ BUREAU OF TRANSPORTATION PLANNING \*\* ☐ OTHER

THE SERVICE WAS POSTED ON THE ANTICIPATED QUARTERLY REQUESTS FOR PROPOSALS

☐ NO ☒ YES DATED 10/1/06 THROUGH 12/31/06

<input checked="" type="checkbox"/> <b>Prequalified Services</b> – See page <u>3</u> of the attached Scope of Services for required Prequalification Classifications.	<input type="checkbox"/> <b>Non-Prequalified Services</b> - If selected, the vendor must make sure that current financial information, including labor rates, overhead computations, and financial statements, if overhead is not audited, is on file with MDOT's Office of Commission Audits. This information must be on file for the prime vendor and all sub vendors so that the contract will not be delayed.
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☒ **Qualifications Based Selection** – Use Consultant/Vendor Selection Guidelines

**For all Qualifications Based Selections**, the selection team will review the information submitted and will select the firm considered most qualified to perform the services based on the proposals. The selected vendor will be contacted to confirm capacity. Upon confirmation, that firm will be asked to prepare a priced proposal. Negotiations will be conducted with the firm selected.

**\*\* For RFP's that originate in Bureau of Transportation Planning only**, a price proposal must be submitted at the same time as, but separate from, the proposal. Submit directly to the Contract Administrator/Selection Specialist, Bureau of Transportation Planning (**see address list, page 2**). The price proposal must be submitted in a sealed manila envelope, clearly marked in large red letters **"PRICE PROPOSAL – TO BE OPENED ONLY BY SELECTION SPECIALIST."** The vendor's name and return address **MUST** be on the front of the envelope. The price proposal will only be opened for the highest scoring proposal. Unopened price proposals will be returned to the unselected vendor(s). Failure to comply with this procedure may result in your bid being opened erroneously by the mail room.

**For a cost plus fixed fee contract**, the selected vendor must have a cost accounting system to support a cost plus fixed fee contract. This type of system has a job-order cost accounting system for the recording and accumulation of costs incurred under its contracts. Each project is assigned a job number so that costs may be segregated and accumulated in the vendor's job-order accounting system.

☐ **Qualifications Review / Low Bid** - Use Consultant/Vendor Selection Guidelines. See Bid Sheet Instructions for additional information.

For Qualification Review/Low Bid selections, the selection team will review the proposals submitted and post the date of the bid opening on the MDOT website. The notification will be posted at least two business days prior to the bid opening. Only bids from vendors that meet proposal requirements will be opened. The vendor with the lowest bid will be selected. The selected vendor may be contacted to confirm capacity.

☐ **Best Value** - Use Consultant/Vendor Selection Guidelines. See Bid Sheet Instructions below for additional information. The bid amount is a component of the total proposal score, not the determining factor of the selection.

☐ **Low Bid** (no qualifications review required - no proposal required.) See Bid Sheet Instructions below for additional instructions.

## BID SHEET INSTRUCTIONS

A bid sheet(s) must be submitted in accordance with the "Guideline for Completing a Low Bid Sheet(s)" (available on MDOT's website). The Bid Sheet is located at the end of the Scope of Services. Submit bid sheet(s) separate from the proposal, to the address indicated below. The bid sheet(s) must be submitted in a sealed manila envelope, clearly marked in large red letters **"SEALED BID – TO BE OPENED ONLY BY SELECTION SPECIALIST."** The vendor's name and return address **MUST** be on the front of the envelope. Failure to comply with this procedure may result in your bid being opened erroneously by the mail room.

**PROPOSAL SUBMITTAL INFORMATION**

REQUIRED NUMBER OF COPIES FOR PROJECT MANAGER 6	PROPOSAL DUE DATE 4/2/07	TIME DUE 4:00 pm
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**PROPOSAL AND BID SHEET MAILING ADDRESSES**

Mail the multiple proposal bundle to the MDOT Project Manager or Other indicated below.

☒ MDOT Project Manager ☐ MDOT Other

Matthew Chynoweth  
Metro Region/Detroit TSC  
1400 Howard Street  
Detroit, Michigan 48216

Mail one additional stapled copy of the proposal to the Lansing Office indicated below.

Lansing Regular Mail	OR	Lansing Overnight Mail
<input checked="" type="checkbox"/> Secretary, Contract Services Div - B225 Michigan Department of Transportation PO Box 30050 Lansing, MI 48909		Secretary, Contract Services Div - B225 Michigan Department of Transportation 425 W. Ottawa Lansing, MI 48933
<input type="checkbox"/> Contract Administrator/Selection Specialist Bureau of Transportation Planning B340 Michigan Department of Transportation PO Box 30050 Lansing, MI 48909		Contract Administrator/Selection Specialist Bureau of Transportation Planning B340 Michigan Department of Transportation 425 W. Ottawa Lansing, MI 48933

**GENERAL INFORMATION**

Any questions relative to the scope of services must be submitted by e-mail to the MDOT Project Manager. Questions must be received by the Project Manager at least four (4) working days prior to the due date and time specified above. All questions and answers will be placed on the MDOT website as soon as possible after receipt of the questions, and at least three (3) days prior to the RFP due date deadline. The names of vendors submitting questions will not be disclosed.

MDOT is an equal opportunity employer and MDOT DBE firms are encouraged to apply. The participating DBE firm, as currently certified by MDOT's Office of Equal Opportunity, shall be listed in the Proposal

**MDOT FORMS REQUIRED AS PART OF PROPOSAL SUBMISSION**

- 5100D – Request for Proposal Cover Sheet
- 5100G – Certification of Availability of Key Personnel

(These forms are not included in the proposal maximum page count.)

# **Michigan Department of Transportation**

## **SCOPE OF SERVICES FOR DESIGN SERVICES**

**CONTROL SECTION(S):** 82192, 82193

**JOB NUMBER(S):** 76902, 79531, 79532 & 79535

### **PROJECT LOCATION:**

M-39 (Southfield Freeway) from I-94 northerly to McClung Street (north of M-10) in the City of Detroit, Wayne county and City of Southfield, Oakland County. The project length is approximately 13.5 miles.

### **PROJECT DESCRIPTION:**

This project consists of all work related to designing this project including but not limited to the following:

- A. Mill and resurfacing of all ramps, and mainline joint and crack repairs and HMA overlay from M-10 to McNichols
- B. Perform shoulder upgrades as required
- C. Upgrade geometrics to current standards
- D. Perform crown and superelevation modifications
- E. Upgrade existing underclearances
- F. Performing CPM type work from McNichols to I-94
- G. Screen wall removal and replacement
- H. Barrier installation on M-39 ramp to I-96 WB adjacent to the CSX Oak switching yard
- I. Incorporate bridge plans for 5 bridges and special provisions (Designed by OTHERS)
- J. Perform design for 16 bridges, including special provisions (See Attachment B)
- K. Potentially perform design for additional bridges, to be determined at Scope Verification
- L. Adjust drainage system to accommodate proposed road work
- M. Adjust and replace existing signs
- N. Incorporate freeway lighting project (Designed by OTHERS)
- O. Incorporate freeway signing project (Designed by OTHERS)
- P. Incorporate MITS work and special provisions
- Q. Adjust and replace signals
- R. Perform guardrail upgrades
- S. Clean existing drainage structures and drainage structure leads, as is required

- T. Install, if not already present, sidewalk ramp terminals at all sidewalk street intersection locations

As part of this project, 5 bridges will be designed by OTHERS. The Consultant will be responsible for all the required plans and special provisions for the staging, maintaining traffic, pavement markings, signals, signing, and bridge-related work (bridge approaches, guardrail, etc.) that these bridges will require. The Consultant will also be responsible for the coordination work required to incorporate the bridge information into the project. The bridge locations are as follows:

<u>Job Number</u>	<u>Structures</u>	<u>Location</u>
86919	P01 of 82192	Sawyer Ave Walkover over M-39
	P03 of 82192	Cathedral Ave Walkover over M-39
	X03 of 82192	CSX RR over M-39
	P02 of 82193	Tournier Ave Walkover over M-39
	P03 of 82193	Vassar Ave Walkover over M-39
86926	S06 of 82193	Outer Drive over M-39

There are 16 bridge rehabilitations included in this project that shall be designed by the Consultant. Please see Attachment B for bridge work descriptions. The bridge locations include, but are not limited to, the following:

<u>Job Number</u>	<u>Structures</u>	<u>Location</u>
79531	S12 of 82192	Joy Road over M-39
	S14 of 82192	West Chicago Road over M-39
	S15 of 82192	Plymouth Road over M-39
	S03 of 82193	Fenkell Ave. over M-39
	S05 of 82193	6 Mile Road over M-39
	S08 of 82193	7 Mile Road over M-39
	S11-4 of 82193	M-102 WB over M-39
79532	S13 of 82192	Fitzpatrick Road over M-39
	S16 of 82192	Fullerton Ave. over M-39
	S01 of 82193	Lyndon Ave. over M-39
	S07 of 82193	Curtis Ave. over M-39
	S09 of 82193	Pembroke Ave. over M-39
79535	S17 of 82192	Schoolcraft Ave. over M-39
	S04 of 82193	Puritan Ave. over M-39
	S10 of 82193	M-102 Left Turn Ramp over M-39
	S11-3 of 82193	M-102 EB over M-39

As part of this project, freeway lighting will be designed by OTHERS, JN 87496. The Consultant will be responsible for all the required plans and special provisions for the staging, maintaining traffic, pavement markings, signals, signing, and other related work. The consultant will provide base plans for the freeway lighting work, and will also be responsible for the coordination work required to incorporate the freeway lighting information into the project.

As part of this project, freeway signing will be designed by OTHERS, JN 82797. The Consultant will be responsible for all the required plans and special provisions for the staging, maintaining traffic, pavement markings, signals, signing, and other related work. The consultant will also be responsible for the coordination work required to incorporate the freeway signing information into the project. Please note that this signing project is for the freeway only, and that the Consultant will be responsible for designing any additional signing (freeway and non freeway) which may be impacted by the project.

The Consultant will be responsible for the design of the removal and replacement of the screen wall along M-39 and the M-39 service drives, JN 89673. The consultant will be responsible for all required plans and special provisions for the staging, maintenance of traffic, pavement markings, signals, signing and other related work. Approximate Length = 5 miles.

The Consultant will also be responsible for the design of proposed barrier wall where the ramp from M-39 to I-96 WB ties into I-96 WB at the edge of the right shoulder to provide a barrier between I-96 traffic and the CSX Oak Switching Yard. Approximate Length = 1000 feet.

**PLAN COMPLETION DATE:** August 1, 2008

**PREQUALIFICATION:**

**Primary Prequalification Classification:**

Roadway Rehabilitation & Rural Freeways  
Short and Medium Span Bridges

**Secondary Prequalification Classification:**

Maintaining Traffic Plans & Provisions  
Pavement Marking Plans & Provisions  
Permanent Freeway Traffic Signing Plans  
Permanent Non-Freeway Traffic Signing Plans  
Traffic Signal Design  
Geotechnical Engineering Services  
Specialty Walls and Slopes  
Landscape Architecture  
Structure Surveys  
Right-of-Way Surveys  
Photogrammetric Control Survey  
Photogrammetry

Asbestos Investigations  
Utility Coordination  
Municipal Utilities  
Road Design Surveys

**DBE REQUIREMENT:** 10 %

**MDOT PROJECT ENGINEER MANAGER:**

Matthew Chynoweth, PE  
Michigan Department of Transportation  
Metro Region / Detroit Transportation Service Center  
1400 Howard Street  
Detroit, Michigan 48216  
Phone: (313) 967-5216  
Fax: (313) 965-6339  
Email: [chynowethm@michigan.gov](mailto:chynowethm@michigan.gov)

**MDOT BRIDGE CONSULTANT COORDINATOR:**

Sam Guerrazzi, PE  
Michigan Department of Transportation  
Design Division  
425 West Ottawa St., P.O. Box 30050  
Lansing, MI. 48909  
Phone: 517-373-0737  
Fax: 517-335-2731  
Email: [guerrazzis@michigan.gov](mailto:guerrazzis@michigan.gov)

**CONSTRUCTION COST:**

A. The estimated cost of construction is:

Jobs designed by **CONSULTANTS:**

JN 76902	M-39 Mill & Resurface From M-10 to McNichols	Programmed Cost:	<b>\$ 9,836,000</b>
	M-39 CPM From McNichols to I-94	Programmed Cost:	<b>\$ 5,000,000</b>
JN 89673	M-39 Screen Wall Replacement	Programmed Cost:	<b>\$ 3,000,000</b>
	M-39 Bridge Rehabilitation,		

JN 79531

S12 of 82192	Joy Road over M-39
S14 of 82192	West Chicago Road over M-39
S15 of 82192	Plymouth Road over M-39
S03 of 82193	Fenkell Ave. over M-39
S05 of 82193	6 Mile Road over M-39
S08 of 82193	7 Mile Road over M-39
S11-4 of 82193	M-102 WB over M-39
	Programmed Cost: \$ 7,629,000

JN 79532

S13 of 82192	Fitzpatrick Road over M-39
S16 of 82192	Fullerton Ave. over M-39
S01 of 82193	Lyndon Ave. over M-39
S07 of 82193	Curtis Ave. over M-39
S09 of 82193	Pembroke Ave. over M-39
	Programmed Cost: \$ 4,487,000

JN 79535

S17 of 82192	Schoolcraft Ave. over M-39
S04 of 82193	Puritan Ave. over M-39
S10 of 82193	M-102 Left Turn Ramp over M-39
S11-3 of 82193	M-102 EB over M-39
	Programmed Cost: \$ 4,381,000

**CONSTRUCTION TOTAL (CONSULTANT): \$34,333,000**

Jobs designed by **OTHERS:**

M-39 Bridge Rehabilitation,

JN 86919

P01 of 82192	Sawyer Ave Walkover over M-39
P03 of 82192	Cathedral Ave Walkover over M-39
X03 of 82192	CSX RR over M-39
P02 of 82193	Tournier Ave Walkover over M-39
P03 of 82193	Vassar Ave Walkover over M-39
	Programmed Cost: \$ 1,768,000

JN 86926

S06 of 82193	Outer Drive over M-39
	Programmed Cost: \$ 571,000

CS 82192, 82193

JN 76902, 79531, 79532, 79535

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JN 87496	M-39 Freeway Lighting From M-10 to McNichols	Programmed Cost:	<b>\$ 2,296,000</b>
JN 82797	M-39 Freeway Sign Replacement From M-10 to I-94	Programmed Cost:	<b>\$ 2,000,000</b>
<b>CONSTRUCTION TOTAL (OTHERS):</b>			<b>\$ 6,635,000</b>
<b><u>GRAND TOTAL:</u></b>			<b><u>\$40,968,000</u></b>

The above construction total is the amount of funding programmed for this project. The Consultant is expected to design the project within the programmed amount.

**If at any time the estimated cost of construction varies by more than 5% of the current programmed amount, then the Consultant will be required to submit a letter to the MDOT Project Manager justifying the changes in the construction cost estimate.**

#### **REQUIRED MDOT GUIDELINES AND STANDARDS:**

Work shall conform to current MDOT, FHWA, and AASHTO practices, guidelines, policies, and standards (i.e. Road Design Manual, Standard Plans, Drainage Manual, Roadside Design Guide, A Policy on Geometric Design of Highways and Streets, Michigan Manual of Uniform Traffic Control Devices, etc.).

Consultant is required to use MDOT's current version of Bentley Microstation for CADD applications and Bentley GEOPAK for road design. Consultant shall comply with all MDOT CADD standards and file naming conventions.

#### **CONSULTANT RESPONSIBILITIES:**

##### **A. DESIGN SCOPE OF WORK**

Complete the design of this project including, but not limited to the following:

1. Perform design survey (See Attachment A).
2. Perform drainage study and related design.
3. Prepare required plans, typical cross-sections, details, and specifications required for design and construction for the Mill & Resurface and pavement repairs portion.

4. Prepare required plans, typical cross-sections, details, and specifications required for design and construction for the CPM portion.
5. Prepare a pavement condition survey.
6. Compute and verify all plan quantities.
7. Prepare staging plans and special provisions for maintaining traffic during construction.
8. Prepare pavement marking plans and special provisions.
9. Prepare traffic signal plans and special provisions.
10. Prepare permanent signing plans and special provisions for non-freeway sign upgrading.
11. Prepare permanent signing plans and special provisions for freeway sign upgrading, and incorporate signing plans designed by OTHERS.
12. Prepare landscaping plans and special provisions.
13. Prepare base sheets to the MDOT Electrical Unit, and incorporate their plans, special provisions and details into the project as appropriate.
14. Provide base sheets to the MDOT MITS Center. Receive MDOT's mark-up drawings, pay items and special provisions, and prepare the necessary MITS plans as appropriate. The Consultant will be responsible for all CADD and SAPW work.
15. Perform a Crash Analysis and Safety Review for this project as well as for the included bridge projects (21 structures)
16. Prepare the accident analysis report for this project and for the included bridge projects (21 structures). A separate report may be required for the roadway, for each of the structure locations, and for each of the design elements included within the design exception requests.
17. Provide a Capacity Analysis as well as user costs.
18. As part of this project, 16 bridges will be designed by the Consultant. (See Attachment B).
19. As part of this project, 5 bridges will be designed by OTHERS. The Consultant will be responsible for all the required plans and special provisions for the additional staging, maintaining traffic, pavement markings, signals, signing, and bridge-related road work (bridge approaches, guardrail, etc.) that these bridges

will require. The Consultant will also be responsible for the coordination work required to incorporate this bridge design information into the project. Also, these bridges may or may not, be packaged separately; with the Consultant being responsible for the work required to coordinate and prepare the final package.

20. As part of this project, the design of additional bridges may be added at a later date, which will be designed by the Consultant. These additional structures may be associated with different job numbers (still to be determined), but will be included within this selection. In the event that the bridges are added, the Consultant will be notified accordingly with Scopes of Work provided at that time.
21. As part of this project, a freeway lighting project and a freeway sign replacement project will be designed by OTHERS. The Consultant will be responsible for all the required plans and special provisions for the additional staging, maintaining traffic, pavement markings, signals, signing, and related road work required. The Consultant will also be responsible for the coordination work required to incorporate this bridge design information into the project.
22. As part of this project, the screen wall removal and replacement on M-39 mainline and service drives will be designed by the Consultant.
23. As part of this project, concrete barrier on M-39 ramp to I-96 WB at the CSX Oak Switching Yard will be designed by the consultant.
24. Assist in the Utility Coordination for the project.
25. Provide solutions to any unique problems that may arise during the design of this project.
26. The Consultant may be required to provide Design Services during the construction phase of this project. If Construction Assistance is required, then a separate authorization for those services will be issued.
27. Attend any project-related meetings as directed by the MDOT Project Manager.

## **B P/PMS TASKS**

1. Meet with the MDOT Project Manager to review project, location of data sources and contact persons, and review relevant MDOT operations. The Consultant shall review and clarify project issues, data needs and availability, and the sequence of events and team meetings that are essential to complete the design by the project plan completion date. Attention shall be given to critical target dates that may require a large lead time, such as geotechnical requirements, ROW submittal dates, Railroad coordination requirements, utility conflict resolution, local agency meetings, etc.

2. Maintain a Design Project Record which includes a history of significant events (changes, comments, etc.) which influenced the development of the plans, dates of submittals and receipt of information.
3. **PPMS TASK 3130 – VERIFY DESIGN SCOPE OF WORK AND COST**  
See PPMS Task Manual for details.
4. **PPMS TASK 3310 – PREPARE AERIAL TOPOGRAPHIC MAPPING**  
See PPMS Task Manual for details.
5. **PPMS TASK 3320 – CONDUCT PHOTOGRAMMETRIC CONTROL SURVEY**  
See PPMS Task Manual for details.
6. **PPMS TASK 3330 – CONDUCT DESIGN SURVEY**  
Perform surveys as necessary to design this project (see Attachment A). The Consultant's survey shall be as complete and accurate as necessary to:
  1. Calculate and verify plan quantities to the Consultant's standards.
  2. Locate and lay out the future construction of this project.
  3. Perpetuate affected property controlling corners for monument preservation.

As part of the design proposal, the Consultant shall present a detailed survey work plan for review, evaluation and acceptance by the MDOT Project Manager. A final survey report for review and approval by the MDOT Survey Unit is required. **Acceptance of the survey by MDOT Design Survey does not in any way relieve the Consultant of responsibility and liability for the content of the survey.**
7. There shall be a preliminary survey review for this project. This review shall be for horizontal and vertical control. The Consultant shall provide copies of all field work notes as well as least square adjustment analysis to the MDOT Project Manager as soon as it is available.
8. The Consultant will be responsible for providing elevation view sketches at both sides of each and every bridge in the project area. The sketch must show the elevation of the roadway at 2 feet inside of the inside edge of metal and 2 feet outside of the outside edge of metal, as well as the interior lane lines, crown point, and shoulder edges. The corresponding elevation of the structure underclearance immediately overhead must also be shown. All underclearance sketches must be shown looking up station.
9. **PPMS TASK 3340 – CONDUCT STRUCTURE SURVEY**  
See PPMS Task Manual for details.
10. **PPMS TASK 3360 – PREPARE BASE PLANS**

See PPMS Task Manual for details.

**11. PPMS TASK 3361 – REVIEW AND SUBMIT PRELIMINARY RIGHT-OF-WAY PLANS**

See PPMS Task Manual for details.

**12. PPMS TASK 3370 – PREPARE STRUCTURE SURVEY**

See PPMS Task Manual for details.

**13. PPMS TASK 3380 – REVIEW BASE PLANS**

See PPMS Task Manual for details.

**14. PPMS TASK 3390 – DEVELOP THE MAINTAINING TRAFFIC CONCEPTS**

See PPMS Task Manual for details.

15. Develop the bridge items required for this project according to the enclosed Attachment B.

16. Perform storm sewer design calculations, including appropriate outlets and energy dissipation if necessary, as outlined in the MDOT Drainage Manual. Detention may be required. Detention pond design must meet, but is not limited to, local agency storm water regulations and Michigan Department of Environmental Quality water quality permit requirements. Submit all design calculations, drainage maps, and proposed profiles to the MDOT Project Manager for review prior to the Plan Review.

17. The Consultant shall identify the locations of any water main and/or sanitary sewer on the project.

18. If water mains and/or sanitary sewers are present within the project limits, the Consultant shall evaluate the necessity for the relocation of water mains and sanitary sewers, in accordance with Design Division's Informational Memorandum #441B and #402R dated April 13, 1992. The Consultant shall submit a report to Steven J. Urda, Design Engineer – Municipal Utilities, Design Division for review and concurrence. A copy of the report shall be sent to the Project Manager. **If relocation is necessary and water main and/or sanitary sewer work is not part of the Scope of Work, contact the MDOT Project Manager immediately.**

**19. PPMS TASK 3522 – CONDUCT HYDRAULIC/HYDROLOGIC ANALYSIS FOR STORM WATER CONVEYANCE**

See PPMS Task Manual for details.

**20. PPMS TASK 3530 – CONDUCT STRUCTURE FOUNDATION INVESTIGATION**

See PPMS Task Manual for details.

21. **PPMS TASK 3535 – CONDUCT STRUCTURE REVIEW FOR ARCHITECTURAL AND AESTHETIC IMPROVEMENT**  
See PPMS Task Manual for details.
22. **PPMS TASK 3540 – DEVELOP THE MAINTAINING TRAFFIC PLAN**  
See PPMS Task Manual for details.
23. **PPMS TASK 3551 – DEVELOP TRAFFIC SIGNAL OPERATIONS**  
See PPMS Task Manual for details.
24. **PPMS TASK 3552 –DEVELOP PRELIMINARY PERMANENT PAVEMENT MARKING PLAN**  
See PPMS Task Manual for details.
25. **PPMS TASK 3553 – DEVELOP PRELIMINARY NON-FREEWAY SIGNING PLAN**  
See PPMS Task Manual for details.
26. **PPMS TASK 3554 – DEVELOP PRELIMINARY FREEWAY SIGNING PLAN**  
See PPMS Task Manual for details.
27. **PPMS TASK 3570 – PREPARE PRELIMINARY STRUCTURE PLANS**  
See PPMS Task Manual for details.
28. **PPMS TASK 3580 – DEVELOP PRELIMINARY PLANS**  
See PPMS Task Manual for details.
29. **PPMS TASK 3581 – REVIEW AND SUBMIT FINAL RIGHT-OF-WAY PLANS**  
See PPMS Task Manual for details.
30. **PPMS TASK 3590 – REVIEW PRELIMINARY PLANS (THE PLAN REVIEW)**  
See PPMS Task Manual for details.
31. **PPMS TASK 3670 – DEVELOP MUNICIPAL UTILITY PLANS**  
See PPMS Task Manual for details.
32. **PPMS TASK 3672 – DEVELOP SPECIAL DRAINAGE STRUCTURES PLANS**  
See PPMS Task Manual for details.
33. **PPMS TASK 3675 – DEVELOP ELECTRICAL PLANS**  
See PPMS Task Manual for details.

34. **PPMS TASK 3680 – OBTAIN REQUIRED MUNICIPAL UTILITY PERMITS (impacted by road work)**  
See PPMS Task Manual Attachment for details.
35. **PPMS TASK 3821 – PREPARE/REVIEW TRAFFIC SIGNAL PLAN**  
See PPMS Task Manual for details.
36. **PPMS TASK 3822 – COMPLETE PERMANENT PAVEMENT MARKING PLAN**  
See PPMS Task Manual for details.
37. **PPMS TASK 3823 – COMPLETE NON-FREEWAY SIGNING PLAN**  
See PPMS Task Manual for details.
38. **PPMS TASK 3824 – COMPETE FREEWAY SIGNING PLAN**  
See PPMS Task Manual for details.
39. **PPMS TASK 3830 – COMPLETE THE MAINTAINING TRAFFIC PLAN**  
See PPMS Task Manual for details.
40. **PPMS TASK 3840 – DEVELOP FINAL PLANS AND SPECIFICATIONS**  
See PPMS Task Manual for details.
41. **PPMS TASK 3850 – DEVELOP STRUCTURE FINAL PLANS AND SPECIFICATIONS**  
See PPMS Task Manual for details.
42. **PPMS TASK 3870 – HOLD OMISSIONS/ERRORS CHECK (OEC) MEETING**  
See PPMS Task Manual for details.  
The interval for plotting cross-sections and developing the grade book shall be 50 feet. The intervals for critical areas shall be 25 feet.
43. **PPMS TASK 5010 – CONSTRUCTION PHASE ENGINEERING AND ASSISTANCE**  
The Consultant may be required to provide Design Services during the construction phase of this project. If Construction Assistance is required, then a separate authorization for those services will be issued.
44. If excavation is required, submit the excavation locations which may contain contamination. Project Manager then can proceed in requesting a Preliminary Project Assessment (PPA).
45. The Consultant shall be required to prepare and submit a CPM network for the construction of this project. See Attachment G for details.

46. **CRASH ANALYSIS.** Perform a crash analysis and determine the recommended countermeasures, (See Attachment B for details). This shall include, but shall not be limited to, performing the crash analysis, which shall include the last 3 years of reliable data for the analysis period. If there has been a fatality within those 3 years, then the analysis shall incorporate the last 7 years of reliable data. The Consultant will be furnished with 3 years of data. If 7 years of data is required, the Consultant shall request in writing, the additional crash data from the MDOT Project Manager (requests may take up to two weeks from the date the request is received to fill).
47. Determine countermeasures based on crash analysis and provide a detailed drawing explaining each recommendation. Determine the construction cost estimate for each countermeasure using MDOT Pay Items.
48. Review and document the roadside safety related items (i.e. guardrail, barriers, attenuators, etc.) which need to be modified or included in the project. Documentation is to include location, existing type and condition, and the recommended treatment.
49. **DRAINAGE STUDY.** Perform drainage study. See Attachment D for details.
50. **UTILITY COORDINATION.** Perform the Utility Coordination for the project (See Attachment F).
51. The Consultant representative shall record and submit type-written minutes for all project related meetings to the MDOT Project Manager within two weeks of the meeting. The Consultant shall also distribute the minutes to all meeting attendees. MDOT will provide and distribute official meeting minutes for the Base Plan Review Meeting (if meeting is necessary) and The Plan Review Meeting.
52. Attend information meetings (i.e. public hearings, open houses, etc.) with the public and public officials to assist in responding to concerns and questions. May require the preparation of displays such as maps, marked-up plans, etc.
53. Prepare and submit electronically (native format or Adobe PDF) any information, calculations, hydraulic studies, or drawings required by MDOT for acquiring any permit (i.e. NPDES, DEQ, etc.), approvals (i.e. County Drain Commission) and related mitigation. MDOT will submit permit requests.
54. Attend any project-related meetings as directed by the MDOT Project Manager.
55. The Consultant shall assist in the review of driveway and utility permit requests, incorporate the information in the design plans, and respond within 2 weeks from receipt of the permit.
56. The MDOT Project Manager shall be the official MDOT contact person for the Consultant **and shall be made aware of all communications regarding this**



**project.** The Consultant must either address or send a copy of all correspondence to the MDOT Project Manager. This includes all Subcontractor correspondence and verbal contact records.

57. The Consultant shall contact the MDOT Project Manager whenever discoveries or design alternatives have the potential to require changes in the scope, limits, quantities, costs, or right-of-way of the project.

58. The Consultant shall be required to coordinate the road design with Lansing Bridge Unit's Bridge Design (for structures designed by OTHERS) and incorporate bridge plans and special provisions in final design.

59. Submit all design files electronically at all submittals.

#### **C. UTILITIES**

The Consultant shall be responsible for obtaining and showing on the plans the location and names of all existing utilities within the limits of the project. In the course of resolving utility conflicts, the Consultant shall make modifications to the plans or design details and provide assistance as directed by the MDOT Utility-Permits Engineer and/or Project Manager. The Consultant shall attend any utility meetings called to ensure that the concerns are addressed on the plans involving utilities. The Consultant shall assist in the review of utility permit requests to ensure compatibility with the project.

#### **D. TRAFFIC CONTROL AND MDOT PERMITS**

The Consultant shall be responsible for all traffic control required to perform the tasks as outlined in this Project Scope of Design Services.

The Consultant shall be responsible for obtaining up to date access permits and pertinent information for tasks in MDOT Right of Way (ROW). This information can be obtained through Kathy Fulton, Utilities/Permits Section, Real Estate Division at (517) 373-7680.

#### **E. MONTHLY PROGRESS REPORT**

On the first of each month, the Consultant Project Manager shall submit a monthly progress report to Matt Chynoweth, MDOT Project Manager, and Sam Guerrazzi, MDOT Bridge Project Manager. The monthly progress report shall follow the guidelines in Attachment H.

#### **MDOT RESPONSIBILITIES**

- A. Schedule and/or conduct the following:
1. Project related meetings.
  2. The Plan Review.
  3. Utility Meetings.

4. Quantity summary sheets and final item cost estimates.
  5. Packaging of plans and proposal.
- B. Furnish Special Details and pertinent reference materials.
  - C. Furnish prints of an example of a similar project and old plans of the area, if available.
  - D. Supply information on existing pavement structure as necessary.
  - E. Coordinate any necessary utility relocation.
  - F. Furnish pavement core information (Consultant shall place information on plan sheets).
  - G. Furnish soil boring information as necessary (Consultant shall place information on plan sheets).
  - H. Pavement design.
  - I. Furnish FTP site for software download and instructions for MDOT Stand Alone Proposal Estimator's Worksheet (SAPW).

**DELIVERABLES:**

The Consultant shall deliver all computer files associated with the project in their native format (spreadsheets, CADD files, GEOPAK files, etc.) on DVD, CD or uploaded to ProjectWise, as directed by the MDOT Project Manager. All CADD/GEOPAK files shall be created and identified with standard MDOT file names as shown in Appendix A of the Road Design Manual. It is the Consultant's responsibility to obtain up to date MicroStation and GEOPAK seed/configuration files necessary to comply with MDOT's CADD standards which are posted to the bulletin board system. When the use of GEOPAK road design software is necessary to develop plans, all pay items shall be placed into the CADD file using GEOPAK's Design and Computation Manager so that Quantity Manager can be used to transfer pay item information to SAPW/Trns\*port. Any CADD/GEOPAK files that do not conform to MDOT standards will be returned to the Consultant for correction at the Consultant's expense.

Proposal documents shall be submitted in their native format with standard naming conventions as well as combined into one Adobe PDF file in the sequence specified by MDOT. To provide text search capabilities, the combined proposal shall be created by converting native electronic files to PDF. Scanning to PDF is discouraged except in instances where it is necessary in capturing a legally signed document or a hard copy version of a document is all that exists.

Plan files shall be submitted in their native dgn format with standard naming conventions as well as plotted into a combined Adobe PDF file. Plan sheets shall be plotted to Adobe PDF with full text search and level on/off capabilities in each full size (24" x 36") and half size (11" x 17") formats. A full size title sheet shall be plotted stamped and signed then scanned for inclusion with the Adobe PDF set. The original title sheet will be sent to the MDOT Project Manager.

Stand Alone Proposal Estimator's Worksheet (SAPW) shall be used to generate the txt and csv files necessary for import into the Trns\*port bid letting software. The SAPW files shall be transmitted electronically by the method specified by the MDOT Project Manager.

The project will require a ratio (scale) of 1:40. Scale and layout of plan sheets to be discussed with MDOT Project Manager.

Other plan sheets that are required for this project shall be completed by the Consultant. These include, but are not limited to the following plan sheets:

- A. The Title Sheet. MDOT will provide a map of the area on a disk in our workstation format. If the map is not available, MDOT will provide a map that could be used. The Consultant shall be responsible for any revisions to the title sheet and the title sheet and map shall meet MDOT format and layout guidelines.
- B. Note Sheet.
- C. Typical Cross-Sections.
- D. Project specific Special Details.
- E. Construction staging and traffic control plans.
- F. Detail grade sheets for major intersections, ramp gores and critical areas.
- G. Paving details.
- H. Pavement marking plan(s).
- I. Culvert detail sheet(s).
- J. Vicinity and drainage map sheet.
- K. Alignment sheet.
- L. Witness and benchmark sheet(s).
- M. Soil boring log sheet(s).

All plans, special provisions, estimates, and other project related items shall meet all MDOT requirements and detailing practices (i.e. format, materials, symbols, patterns, and layout) or as otherwise directed by the Project Manager.

All plans, specifications, and other project related items are subject to review and approval by MDOT.

## **PROJECT SCHEDULE**

The Consultant shall use the following events to prepare the proposed implementation schedule as required in the Guidelines for the Preparation for Responses on Assigned Design Services Contracts. These dates shall be used in preparing the Consultant's Monthly Progress Reports.

<u>Target Date</u>	<u>Task #</u>	<u>Description</u>
	3130	Verify Design Scope of Work and Cost
	3310	Prepare Aerial Topographic Mapping
	3320	Conduct Photogrammetric Control Survey
	3330	Conduct Design Survey
	3340	Conduct Structure Survey
		Submit Survey Final Deliverables
	3360	Prepare Base Plans
		Submit Base Plans
		Review Base Plans (Hold Base Plan Review Meeting)
	3361	Review and Submit Preliminary Right-of-Way Plans
	3370	Prepare Structure Survey
	3380	Review Base Plans
	3390	Develop the Maintaining Traffic Concepts
	3522	Conduct Hydraulic/Hydrologic Analysis for Storm Water Conveyance
	3530	Conduct Structure Foundation Investigation
		Submit Plans for Utility Review (approximately 50% complete)
		Submit Environmental Permit Information (6 months prior to the Plan Completion Date)
	3535	Conduct Structure Review for Architectural and Aesthetic Improvement
	3540	Develop the Maintaining Traffic Plan
	3551	Develop Traffic Signal Operations Plan
	3552	Develop Preliminary Permanent Pavement Marking Plan
	3553	Develop Preliminary Non-Freeway Signing Plan
	3554	Develop Preliminary Freeway Signing Plan
	3570	Prepare Preliminary Structure Plans
	3580	Develop Preliminary Plans
		Submit Preliminary Plans
	3581	Review and Submit Final Right-of-Way Plans
	3590	Review Preliminary Plans (Hold The Plan Review Meeting)
	3670	Develop Municipal Utility Plans
	3672	Develop Special Drainage Structure Plans
	3675	Develop Electrical Plans
	3680	Obtain Required Municipal Utility Permits
	3821	Prepare/Review Traffic Signal Plan
	3822	Complete Permanent Pavement Marking Plan

	3823	Complete Non-Freeway Signing Plan
	3824	Complete Freeway Signing Plan
	3830	Complete the Maintaining Traffic Plan
	3840	Develop Final Plans and Specifications
	3850	Develop Structure Final Plans and Specifications
6/18/2008		Submit Final Plan/Proposal Package to MDOT for final review
	3870	Hold Omissions/Errors Check (OEC) Meeting
7/18/2008		Omissions/Errors Check (OEC) Meeting (approximate date)
8/1/2008		Consultant's Plan Completion: Final Construction
		Plan/Proposal package with recommendations incorporated to MDOT (two weeks after OEC Meeting)
10/1/2008		Final Deliverables to MDOT

### **PAYMENT SCHEDULE**

Compensation for this Scope of Design Services shall be on an actual Cost Plus Fixed Fee basis.

### **CONSULTANT PAYMENT:**

All invoices/bills for services must be directed to the Department and follow the 'then current' guidelines. The latest copy of the "Professional Engineering Service Reimbursement Guidelines for Bureau of Highways" is available on MDOT's Bulletin Board System. This document contains instructions and forms that must be followed and used for invoicing/billing; payment may be delayed or decreased if the instructions are not followed.

Payment to the Consultant for Services rendered shall not exceed the "Cost Plus Fixed Fee Not to Exceed Maximum Amount" unless an increase is approved in accordance with the contract with the Consultant. All invoices/bills must be submitted within 14 calendar days of the last date of services being performed for that invoice.

Direct expenses will not be paid in excess of that allowed by the Department for its own employees in accordance with the State of Michigan's Standardized Travel Regulations. Supporting documentation must be submitted, with the invoice/bill, for all billable expenses on the Project. The only hours that will be considered allowable charges for this contract are those that are directly attributable to the activities of this Project. Hours spent in administrative, clerical, or accounting roles for billing and support, are not considered allowable hours; there will be no reimbursement for these hours.

The use of overtime hours is not acceptable unless prior written approval is granted by the MDOT Region Engineer and the MDOT Project Manager. Reimbursement for overtime hours that are allowed will be limited to time spent on this project in excess of forty hours per person per week. Any variations to this rule should be included in the price proposal submitted by the Consultant and must have prior approval by the MDOT Project Engineer Manager.

## **ATTACHMENT A**

### **SURVEY SCOPE OF WORK**

Survey Limits: As needed for Design, Right of Way, and Construction. A description of survey limits detailing length, width and cross roads must be included in the Survey Work Plan.

**NOTES:** The Selected Consultant shall discuss the scope of this survey with an MDOT Region Surveyor or Lansing Design Support Area Surveyor before submitting a priced proposal.

The Selected Consultant surveyor must contact the Region or TSC Traffic and Safety Engineer for work restrictions in the project area prior to submitting a priced proposal.

A **detailed Survey Work Plan** must be included in the project proposal. A **spreadsheet estimate** of hours by specific survey task such as traversing, leveling, mapping, etc., must be included in the **priced proposal**.

It is the responsibility of the Professional Surveyor to safeguard all corners of the United States Public Land Survey System, published Geodetic Control and any other Property Controlling corners that may be in danger of being destroyed by the proposed construction project.

**See Mapping section for details on existing MDOT photogrammetric mapping.**

#### **GENERAL REQUIREMENTS:**

1. Surveys must comply with **all Michigan law** relative to land surveying.
2. Surveys must be done under the **direct supervision** of a Professional Surveyor licensed to practice in the State of Michigan.
3. Work in any of the following categories of survey: Road Design, Structure, Hydraulic, Right-of-Way, and/or Ground Control (Photogrammetric) must be completed by a survey firm which is pre-qualified by MDOT for that category.
4. Surveys must meet all requirements of the Michigan Department of Transportation (MDOT) Design Surveys *Standards of Practice* dated March 2006, the MDOT Design Survey Manual on-line, and the MDOT RTK guidelines. Please contact the Design Survey office to clarify any specific questions regarding these standards.
5. Consultants must obtain all necessary permits required to perform this survey on any public and/or private property, including an up-to-date permit from the MDOT Utilities

Coordination and Permits Section.

6. Prior to performing the survey, the Consultant must contact all landowners upon whose lands they will enter. The contact may be personal, phone or letter, but must be documented. This notice must include the reasons for the survey on private land, the approximate time the survey is to take place, the extent of the survey including potential brush cutting (which must be minimized), and an MDOT contact person (the MDOT Project Manager or designate).
7. The Consultant must contact any and all Railroads prior to commencing field survey on railroad property. The cost for any permit, flaggers and/or training that is required by the Railroad will be considered as a direct cost, but only if included in the Consultant's priced proposal.
8. The consultant must adhere to all applicable OSHA and MIOSHA safety standards, including the appropriate traffic signs for the activities and conditions for this job.
9. Consultants are responsible for a comprehensive and conscientious research of all records, including MDOT records, essential for the completion of this project.
10. Measurements, stationing, recorded data, and computations must be in **International Feet**, unless specified otherwise by the Project Manager.
11. Coordinate values shall be based upon the Michigan State Plane coordinate system NAD83. All elevations must be based upon the North American Vertical Datum of 1988 (NAVD88). The datums must be clearly stated in the Survey Work Plan. A preliminary submittal of the adjusted Horizontal and Vertical control for the project may be submitted to the MDOT Survey Consultant Coordinator or Region Surveyor for review and acceptance as soon as it is available.
12. The survey notes must be submitted to the Design Survey Unit in 10" by 12" divided portfolios with flap covers. As many portfolios should be used as are needed to contain all of the required documents and Compact Discs (CD's) or DVD's. **Duplicate CD's must be included in the portfolio, with one set labeled "Region Surveyor".**
13. Each portfolio must be labeled on the outside as in the following example:

Survey Notes for:

Route, Location and Project Limits [I-94 under Beaubien Street ]

Control Section [S06 of 82024] Job Number [45197D] Date [ *of submittal* ]

By [ *Name of Firm* ]

Michigan  
Professional  
Surveyor [   
 ]  
License # [

14. Each submittal is to be divided into six sections. These sections are to be labeled as follows: **Administrative, Alignment, Control, Property, Mapping, and Miscellaneous.**
15. **All data**, whether electronic or paper, **must be recorded on non-rewritable Compact Discs (CD's)**. All paper files, including MicroStation files, must be scanned and/or converted to Adobe Acrobat .PDF format. CD's must be organized in the same manner as the portfolio, such as by Administrative section, Control section, etc. A Table of Contents in Adobe Acrobat format is required that has all .PDF pages of the CD bookmarked/linked so each place in the .PDF archive can be accessed with a single click of the computer mouse. Specified format files such as ASCII text, CAiCE and MicroStation must have separate access. CD's must be labeled with the control section, job number, data type and file names.
16. Each category of survey must be packaged separately (i.e., Structure surveys separate from Road surveys and Hydraulic surveys). All sheets in a portfolio must be marked with the control section and job number. CD's must be labeled with the control section, job number, data type and file names.
17. The Consultant representative shall record and submit typewritten minutes for all project related meetings to the MDOT Project Manager within two weeks of the meeting. The Consultant shall also distribute the minutes to all meeting attendees.
18. MDOT Project Manager Matthew Chynoweth is the official contact for the Consultant. The Consultant must send a copy of all project correspondence to the MDOT Project Manager. The MDOT Project Manager shall be made aware of all communications regarding this project. Any survey related questions regarding this project should be directed to Survey Consultant Coordinator Tom Bogren, 517-335-1914, e-mail [bogrent@michigan.gov](mailto:bogrent@michigan.gov).

At the completion of this survey for this project, legible copies of all field survey notes, all electronic data, and all research records obtained for this project will be considered the property of MDOT and **must be sent to** the MDOT, Design Survey Unit, Supervising Land Surveyor, P.O. Box 30050, Lansing, MI 48909. Please use MDOT's Form 222 (5/01) entitled "SURVEY NOTES: RECEIPT AND TRANSMITTAL" for all transmittals. A copy of this transmittal form must also be sent to the MDOT Project Manager for Design.

**Acceptance of this survey by the MDOT Supervising Land Surveyor and/or the MDOT Project Manager does not relieve the Consultant of any liability for the content of the survey.**

## **WORK RESTRICTIONS**

The Selected Consultant, and the Selected Consultant only, is advised to discuss Traffic Control scenarios with the MDOT Traffic and Safety Engineer Georgina McDonald at the MDOT



Detroit TSC, 313-967-5431 prior to submitting a priced proposal.

No lane closures or shoulder closures will be allowed until September, or until after M-10 the Lodge Freeway reopens.

No work shall be performed or lane closures allowed during the Memorial Day, July 4<sup>th</sup>, or Labor Day holiday periods, as defined by the MDOT Project Manager or representative specifically designated by the Project Manager.

The Consultant must call the MDOT Detroit TSC Traffic and Safety Engineer before beginning work to inform her of surveying activity in the area. The MDOT Region or TSC must be notified at least two weeks prior to lane closures so advance notice can be posted on the Web site.

Traffic shall be maintained by the Consultant throughout the project in accordance with Sections 812, 922, 103.05 and 103.06 of the *Standard Specifications for Construction*, 2003 edition, [www.mdot.state.mi.us/specbook/](http://www.mdot.state.mi.us/specbook/), and Supplemental Specification 03SS001(2) Errata to the 2003 Standard Specifications and all other supplemental specifications currently in effect against the Standard Specifications for Construction. All traffic control devices shall conform to the current edition, as revised, of the *Michigan Manual of Uniform Traffic Control Devices* (MMUTCD). All warning signs for maintenance of traffic used on this project shall be fabricated with prismatic retro-reflective sheeting, and shall be set up five feet above ground.

The Consultant shall use MDOT standard “maintaining traffic” typicals for any and all closures. Typical MDOT traffic control diagrams are available on line at [www.mdot.state.mi.us/tands/plans.cfm](http://www.mdot.state.mi.us/tands/plans.cfm)

## **COORDINATION WITH OTHER CONTRACTS IN THE VICINITY**

The Consultant shall contact the Detroit TSC to coordinate his operations with contractors performing work on other projects within or adjacent to the Construction Influence Area (CIA).

The Consultant’s attention is called to the requirements of cooperation with others as covered in Article 104.07 of the 2003 Standard Specifications for Construction. Other contracts or maintenance operations may occur during the life of the project.

No claim for extra compensation or adjustment in contract unit prices will be allowed on account of delay or failure of others to complete work unit scheduled.

## **FIELD SURVEY**

The purpose of the field survey is to obtain all information and data required by the project design engineer, to leave control in the field for future construction staking, and to provide a sufficient history of the area to enable the MDOT Design Survey Unit to perform dependable surveys in the future. The Consultant surveyor must discuss the scope of this survey with the project design engineer before initiating any work on this project. Notes of this meeting and a detailed Survey Work Plan with an estimate of hours broken down by specific survey task must

be submitted to the MDOT Project Manager and Survey Consultant Coordinator within two weeks of this meeting.

## CONTROL

A three dimensional control system has been established throughout the project area, by MDOT staff in 1998 as ground control for aerial photogrammetry. This control is based on the Michigan State Plane Coordinate System NAD1983 horizontal datum and NAVD 1988 vertical datum, and will be available to the Selected Consultant. MDOT surveyors ran a bench loop on the NAVD88 datum completely through the project area, setting benchmarks every quarter mile.

Approximately half of these will be recoverable. MDOT surveyors established numerous unwitnessed ground control targets, most unrecoverable, and also established four primary control point pairs in the project area, all of which should be recoverable. The Selected Consultant will be furnished with this information.

All subsequent control must fit with the established control. Any traverse points or bench marks established must adhere to the Michigan Department of Transportation (MDOT) Design Surveys *Standards of Practice* dated March 2006 and be listed in the Control pocket of the portfolio.

OPUS positioning may be used as a check, and for positioning Primary Control as defined in the MDOT Standards of Practice for Design Survey March 2006. For any and all OPUS solutions, a RINEX format file with a minimum of two hours of GPS data must be included, as well as the OPUS solution (extended version) from NGS. All OPUS solutions must be verified within 0.20 foot, either by a separate OPUS position from an independent occupation, or by a NGS/CORS adjustment.

## GOVERNMENT CORNERS

Any PLSS corners within the project limits must be recovered or established and tied to the project coordinate system.

All PLSS corners must be recorded in accordance with PA 74 of 1970, as amended, and all applicable administrative rules. A copy of each **recorded Land Corner Recordation Certificate** must be submitted to the MDOT Design Survey Office as part of the final report. All PLSS corners located in hard surface roads must be protected by a monument box, regardless of impending construction. The consultant shall provide to the Survey Project Manager a list of any affected Government or Property Controlling Corners in the detailed work plan for discussion or approval.

The Consultant must provide a **government corner point list** with witnesses in ASCII for all government corners found or set. This list may be appended to the witness list for horizontal and vertical control points. This list used must include include datum, corner designations, descriptions, coordinates, combined Scale Factor, and witnesses. This list may be appended to the witness list for horizontal and vertical control points.

The Consultant surveyor must contact the Wayne County Remonumentation Representative,

Norman Dupuie, 313-224-5887, prior to beginning work on the project to inform him of proposed corner perpetuation activities, and to obtain information pertinent to PLSS corners and/or property controlling corners affected by project construction.

## **ALIGNMENT**

Since most existing alignment points locate and define the boundary between the public Right of Way and private ownership, alignment points are considered Property Controlling Corners and must be recovered and recorded in accordance with PA 74 of 1970, as amended, and all applicable administrative rules. A copy of each recorded Land Corner Recordation Certificate must be submitted in the Property Section of the final portfolio.

The Consultant must clearly define in the Work Plan what type of alignment is proposed, and how the stationing will be established, and whether or not the alignment will be staked in the field. An alignment sheet must be prepared and submitted that shows the alignment with stationing and coordinates, and the source of stationing, curve data, and the alignment definition (As Constructed or Legal). Horizontal control points and government corners are also appropriate for this sketch or CADD drawing.

The Consultant must provide an **alignment control point list** with witnesses in ASCII for all alignment points found or set. This list must include datum, corner designations, descriptions, coordinates, combined Scale Factor, and witnesses. This list may be appended to the witness list for horizontal and vertical control points.

**All monument boxes on M-39 through the project area must be accounted for** by the Consultant surveyor, shown on the project mapping, and have a recorded LCRC submitted with the survey portfolio.

## **MAPPING**

In 1997, MDOT hired EarthData to target, fly low altitude, and map M-39 through most of the current project area. The mapping starts north of I-94 just south of the overpass to Van Born, and extends northerly to approximately 500 feet past the split of M-39 into separate northbound and southbound roadways, just south of M-10. Mapping width is approximately 300 feet, from outside of service drive to outside of service drive.

EarthData produced both 2-D planimetric files and 3-D terrain files. These MicroStation V7 files have been converted from meters to feet and will be available to the Selected Consultant. The contour lines remain in meters, as do all spot elevations.

The Consultant must submit a **CAiCE software file, named 76902C.zip**, utilizing CAiCE's built-in archive feature, of all survey mapping points and data files for the mapping area. A Digital Terrain Model (DTM), named EXRD must be included for the mapping area if produced for design. The Consultant is responsible for using the latest MDOT CAiCE Feature Codes, files and tugboat, available on the MDOT File Transfer Protocol (FTP) site. The tugboat can be used to convert CAiCE files into Geopak and MicroStation formats. **The CAiCE software used**

**must be Version 10.5 or newer.**

The Consultant must provide an electronic **MicroStation Intergraph Version 8 format file** of the mapping area. This must be named **76902PL.dgn** and must be submitted **in a sub-directory outside of the CAiCE archive file** named “MicroStation.” The MicroStation file will be a 2-D file of the planimetric features including contours. This file must be sized appropriately, utilizing the seed file **seedrd.dgn** with working units of 1000, 1., and be compiled in standard MDOT format. The Consultant is responsible for using the latest MDOT Resource files, color table, and cell files, available on the MDOT File Library site under CAD\_V8. Go to <http://mdotwas1.mdot.state.mi.us/public/bbs/>

For a comprehensive list of MicroStation level designations, contents and line attributes, refer to the “MDOTV8LEVEL.pdf” table located on the MDOT ftp site at <ftp://ftp.michtrans.net/>. The consultant Username is “survcons.” The consultant password is \$urvcon\$. This table replaces the former Attachments AA, C & D. Also in the ftp site, the Consultant should refer to the V8GROUP&ALPHA LIST.pdf file for Data Collection Codes.

The Consultant must also submit **files created from CAiCE that are formatted for design in Geopak** software. This can be accomplished by using the MDOT Plans Production CAiCE Tugboat available on the MDOT Design Survey FTP site. The Consultant must submit a 3D MicroStation Triangle file, a Survey Chain (TIN Boundary) around the edited Triangle file with the name and Feature “CLIP”, a Job#.OBS file, a Job#.KCP file, a Job#.XYZ file and a Job#.ALI file. Each alignment must be computed separately and uniquely named. These files must be submitted electronically **in a subdirectory outside of the CAiCE archive file** named “Geopak.”

## **POST SURVEY CLEAN-UP**

Once the survey is complete, all stakes must be removed to aid the maintenance crews and adjacent property owners. All benchmarks and control points and their witnesses must remain in place.

## **FINAL REPORT: DELIVERABLES**

The final report for this project shall include:

1. In the first pocket of the portfolio, labeled **ADMINISTRATIVE**, the following will appear:
  - a. MDOT’s Form 222(5/01) entitled “SURVEY NOTES: RECEIPT AND TRANSMITTAL”
  - b. The project’s Professional Surveyor’s Report on company letterhead consisting of:
    - i) A comprehensive synopsis of the work performed on this project, signed **and sealed** by the project’s Professional Surveyor.
    - ii) The source and methods used to establish the project horizontal and vertical control and alignment(s) for this project.
    - iii) A detailed explanation of anything discovered during the survey of this project that may create a problem for the designer or another surveyor.

- c. CD with all documents scanned or converted into PDF files. Each page must be inserted in a master PDF file and bookmarked for easy retrieval. An example can be provided upon request.
2. In the second pocket of the portfolio, labeled **ALIGNMENT**, the following will appear:
- a. A sketch or CADD drawing of the alignment(s):
    - i) A statement defining the alignment(s) as **legal or as-constructed**
    - ii) Stationing, source of stationing, and station equation to existing stationing
    - iii) Horizontal coordinates
    - iv) Curve data
    - v) Alignment points found or set
    - vi) Control points
    - vii) Reference lines and angles of crossing (if appropriate)
    - viii) Government corners
  - b. Witness list for the alignment points found or set, which shows coordinates, stationing and four witnesses for each alignment point
  - c. LCRC's for alignment points found.
3. In the third pocket of the portfolio, labeled **CONTROL**, the following will appear:
- a. Documentation of horizontal and vertical datum sources.
  - b. OPUS documentation
  - c. Least squares adjustments for the horizontal and vertical control.
  - d. Text files in ASCII format, hard copy and on CD, which contain the witness lists for the horizontal alignment ties, horizontal control points, benchmarks and government corners. All witness lists must note the datum(s), a combined scale factor for state plane grid-to-ground conversion, and an example thereof.
4. In the fourth pocket of the portfolio, labeled **PROPERTY**, the following will appear:
- a. Tax maps and descriptions with owner names, addresses and phone numbers, if Right of Way is to be acquired
  - b. Property ties to the project coordinate system with maps, plats, and recorded surveys marked with point numbers, if Right of Way is to be acquired.
  - c. Legible **recorded** copies of all Land Corner Recordation Certificates (LCRC) filed for the government corners (PLSS corners and Property Controlling Corners) used for computations and/or in danger of obliteration by impending construction.
5. In the fifth pocket of the portfolio, labeled **MAPPING**, the following will appear:
- a. Mapping file in MicroStation format, and converted to .PDF format. Hardcopy signed and sealed.
  - b. An archived CAiCE software file.
  - c. Geopak files
  - d. All field survey notes, electronic data and research records obtained for the project. It is not necessary to submit electronic raw survey data in hardcopy form.
  - e. All supporting and supplemental information or data.
6. In the sixth pocket of the portfolio, labeled **MISCELLANEOUS**, the following will appear:

- a. Any photographs taken for clarity of an area
- b. Any newspaper clippings related to the project
- c. Any information not covered in this scope that will be of benefit to the designer or another surveyor

**General Notes**

- a. It is the responsibility of the consultant to insure that all electronic files submitted to MDOT conform to the required format and that all documents are legible.
- b. The consultant must organize and label the various sections of the portfolio as required by the Standards of Practice for MDOT Design Surveys dated March 2006.
- c. All research documents are required to be scanned and placed on the CD.
- d. It is desirable to limit paper and to include as much electronic data as possible on Compact Disc or DVD, including scanned items, to facilitate future electronic storage and transmission of survey data. **Duplicate CD's must be included in the portfolio, with one set labeled "Region Surveyor".**

**ATTACHMENT B**  
**CS: 82192, 82193 - JN: 76902, 79531, 79532 & 79535**  
**M-39 (Southfield Freeway) from M-10 to I-94**  
**Cities of Southfield, Detroit and Dearborn, Oakland and Wayne Counties**

**SCOPE OF BRIDGE DESIGN SERVICES**

**PROJECT LOCATION: M-39 overpass structures, Wayne County**

**CONTROL SECTION, JOB NUMBER:** 82192 - J.N. 79531D  
82192 - J.N. 79532D  
82192 - J.N. 79535D  
82193 - J.N. 79531D  
82193 - J.N. 79532D  
82193 - J.N. 79535D

**I. DESCRIPTION OF WORK:**

The work for this project shall consist of the following:

**S12-82192, Joy Rd. over M-39, JN 79531D**, Superstructure replacement, substructure repair, approaches and guardrail. The total length of the existing two span continuous bridge is approximately 108 feet. The existing superstructure consists of rolled steel beams. The existing deck cross-section consists of a 75 ft. clear roadway with two 10 ft. raised concrete walk islands and two 15 ft. turning lanes. The vertical underclearance shall be investigated at the study stage. The AASHTO requirement for vertical underclearance is 14'-6". All efforts shall be made to obtain the required underclearance. If this is not feasible, a design exception shall be prepared. Traffic shall be maintained by part width construction.

**S14-82192, West Chicago Rd. over M-39, JN 79531D**, Deck replacement, partial paint, substructure repair, approaches. The total length of the existing two span continuous bridge is approximately 109 feet. The existing superstructure consists of rolled steel beams. The existing deck cross-section consists of a 69 ft. clear roadway with a 10 ft. raised concrete walk island, 10 ft. sidewalk and 15 ft. turning lane. The vertical underclearance shall be investigated at the study stage. The AASHTO requirement for vertical underclearance is 14'-6". All efforts shall be made to obtain the required underclearance. If this is not feasible, a design exception shall be prepared. Traffic shall be maintained by part width construction.

**S15-82192, Plymouth Rd. over M-39, JN 79531D**, Deck replacement, beam end repairs, and substructure repairs and approaches. The total length of the existing two span bridge is approximately 112 feet. The existing superstructure consists of rolled steel beams. The existing deck cross-section consists of a 84 ft. clear roadway with two 10 ft. raised concrete walk islands and two 15 ft. turning lanes. The vertical underclearance shall be investigated at the study stage. The AASHTO requirement for vertical underclearance is 14'-6". All efforts shall be made to obtain the required underclearance. If this is not feasible, a design exception shall be prepared. Traffic shall be maintained by part width construction.

**S03-82193, Fenkell Ave. over M-39, JN 79531D**, Deck replacement, paint, substructure repair and approaches. The total length of the existing two span continuous bridge is approximately 111 feet. The existing superstructure consists of rolled steel beams. The existing deck cross-section consists of a 91 ft. clear roadway. The vertical underclearance shall be investigated at the study stage. The AASHTO requirement for vertical underclearance is 14'-6". All efforts shall be made to obtain the required underclearance. If this is not feasible, a design exception shall be prepared. Traffic shall be maintained by part width construction.

**S05-82193, 6 Mile Rd. over M-39, JN 79531D**, Deck replacement with widening, beam repairs, partial paint, substructure repair and approaches. The total length of the existing two span bridge is approximately 104 feet. The existing superstructure consists of rolled steel beams. The existing deck cross-section consists of a 75 ft. clear roadway with two 10 ft. raised concrete walk islands and two 15 ft. turning lanes. The vertical underclearance shall be investigated at the study stage. The AASHTO requirement for vertical underclearance is 14'-6". All efforts shall be made to obtain the required underclearance. If this is not feasible, a design exception shall be prepared. Traffic shall be maintained by part width construction.

**S08-82193, 7 Mile Rd. over M-39, JN 79531D**, Deck replacement, steel repairs, partial paint, substructure repair and approaches. The total length of the existing two span continuous bridge is approximately 109 feet. The existing superstructure consists of rolled steel beams. The existing deck cross-section consists of a 125 ft. clear roadway. The vertical underclearance shall be investigated at the study stage. The AASHTO requirement for vertical underclearance is 14'-6". All efforts shall be made to obtain the required underclearance. If this is not feasible, a design exception shall be prepared. Traffic shall be maintained by part width construction.

**S11-4-82193, M-102 WB over M-39, JN 79531D**, Deck replacement, widening, repair or replace South fascia beam, substructure repair and approaches. The total length of the existing two span continuous bridge is approximately 109 feet. The existing superstructure consists of rolled steel beams. The existing deck cross-section consists of a 48 ft. clear roadway a 10 ft. raised concrete walk island and a 15 ft. turning lane. The vertical underclearance shall be investigated at the study stage. The AASHTO requirement for vertical underclearance is 14'-6". All efforts shall be made to obtain the required underclearance. If this is not feasible, a design exception shall be prepared. Traffic shall be maintained by part width construction.

**S13-82192, Fitzpatrick Rd. over M-39, JN 79532D**, Deck replacement, partial paint, substructure repair and approaches. The total length of the existing two span continuous bridge is approximately 108 feet. The existing superstructure consists of rolled steel beams. The existing deck cross-section consists of a 28 ft. clear roadway. The vertical underclearance shall be investigated at the study stage. The AASHTO requirement for vertical underclearance is 14'-6". All efforts shall be made to obtain the required underclearance. If this is not feasible, a design exception shall be prepared. Traffic shall be maintained by detour.

**S16-82192, Fullerton Ave. over M-39, JN 79532D**, Shallow overlay, pier and diaphragm repair. The total length of the existing four span bridge is approximately 169 feet. The existing superstructure consists of concrete I-beams. The existing deck cross-section consists of a 44 ft. clear roadway with a six ft. sidewalk on one side. The vertical underclearance shall be



investigated at the study stage. The AASHTO requirement for vertical underclearance is 14'-6". All efforts shall be made to obtain the required underclearance. If this is not feasible, a design exception shall be prepared. Traffic shall be maintained by part width construction.

**S01-82193, Lyndon Ave. over M-39, JN 79532D**, Superstructure replacement, substructure repair and/or pier cap replacement and approaches. The total length of the existing two span bridge is approximately 110 feet. The existing superstructure consists of side by side post-tensioned box beams. The existing deck cross-section consists of a 44 ft. clear roadway with two 10'-6" sidewalks on each side. The vertical underclearance shall be investigated at the study stage. The AASHTO requirement for vertical underclearance is 14'-6". All efforts shall be made to obtain the required underclearance. If this is not feasible, a design exception shall be prepared. Traffic shall be maintained by part width construction.

**S07-82193, Curtis Ave. over M-39, JN 79532D**, Superstructure replacement, pier replacement and approaches. The total length of the existing two span bridge is approximately 109 feet. The existing superstructure consists of prestressed concrete I-beams. The existing deck cross-section consists of a 44 ft. clear roadway with two 10 ft. sidewalks on each side. The vertical underclearance shall be investigated at the study stage. The AASHTO requirement for vertical underclearance is 14'-6". All efforts shall be made to obtain the required underclearance. If this is not feasible, a design exception shall be prepared. Traffic shall be maintained by part width construction.

**S09-82193, Pembroke Ave. over M-39, JN 79532D**, Superstructure replacement, substructure repair and/or pier cap replacement and approaches. The total length of the existing two span bridge is approximately 109 feet. The existing superstructure consists of prestressed concrete I-beams. The existing deck cross-section consists of a 44 ft. clear roadway with two 10'-8" sidewalks on each side. The vertical underclearance shall be investigated at the study stage. The AASHTO requirement for vertical underclearance is 14'-6". All efforts shall be made to obtain the required underclearance. If this is not feasible, a design exception shall be prepared. Traffic shall be maintained by part width construction.

**S17-82192, Schoolcraft Ave. over M-39, JN 79535D**, Deck replacement, raising the superstructure, paint, substructure repair and approaches. The total length of the existing two span continuous bridge is approximately 109 feet. The existing superstructure consists of steel rolled beams. The existing deck cross-section consists of a 128 ft. clear roadway with two 10 ft. sidewalks on each side. The vertical underclearance shall be investigated at the study stage. The AASHTO requirement for vertical underclearance is 14'-6". All efforts shall be made to obtain the required underclearance. If this is not feasible, a design exception shall be prepared. Traffic shall be maintained by part width construction.

**S04-82193, Puritan Ave. over M-39, JN 79535D**, Deck replacement, beam end repair, partial paint, substructure repair and approaches. The total length of the existing four span bridge is approximately 159 feet. The existing superstructure consists of rolled steel beams. The existing deck cross-section consists of a 44 ft. clear roadway with 10'-8" sidewalks on each side. The vertical underclearance shall be investigated at the study stage. The AASHTO requirement for

vertical underclearance is 14'-6". All efforts shall be made to obtain the required underclearance. If this is not feasible, a design exception shall be prepared. Traffic shall be maintained by detour.

**S10-82193, M-102 Left Turn Ramp over M-39, JN 79535D**, Deck replacement, widening, pier replacement, abutment repair, approaches. The total length of the existing two span continuous bridge is approximately 132 feet. The existing superstructure consists of rolled steel beams. The existing deck cross-section consists of a 24 ft. clear roadway with two four ft. sidewalks on each side. The vertical underclearance shall be investigated at the study stage. The AASHTO requirement for vertical underclearance is 14'-6". All efforts shall be made to obtain the required underclearance. If this is not feasible, a design exception shall be prepared. Traffic shall be maintained by part width construction.

**S11-3-82193, M-102 EB over M-39, JN 79535D**, Deck replacement, widening, substructure repair, fascia beam replacement and approaches. The total length of the existing two span continuous bridge is approximately 109 feet. The existing superstructure consists of rolled steel beams. The existing deck cross-section consists of a 48 ft. clear roadway with an 11 ft. sidewalk on the South side. The vertical underclearance shall be investigated at the study stage. The AASHTO requirement for vertical underclearance is 14'-6". All efforts shall be made to obtain the required underclearance. If this is not feasible, a design exception shall be prepared. Traffic shall be maintained by part width construction.

## **II. CONSULTANT RESPONSIBILITIES**

The scope of design services to be done by the consultant is as follows:

- A. Prior to submitting Proposal for Indefinite Delivery of Services, inspect the job site to determine the need for any additional work not included in the "Description of Work". If possible changes to the description of work are needed, submit a letter with your proposal detailing the changes that are recommended. (MDOT will not be reimbursing the consultant for the initial site visit, as the consultant is not yet authorized to do work.)
- B. Consider other alternatives, at the study phase that may deviate from the "Description of Work" to determine the most cost effective option. A **detailed** cost estimate is required for each option. A cost per square foot estimate is **not** acceptable. The vertical underclearance must be considered. A design exception, if required, should be submitted to MDOT with the structure study.
- C. Perform survey. See "Bridge Attachment A" for details. **(P/PMS TASK 3340)**
- D. Prepare required plans, typical cross-sections, details, and specifications required for design and construction.
- E. Preparation of both contract plans and bid item quantities using standard English units, as applicable. Stand-Alone Estimator's Worksheet (SAEW) shall be used

to generate a bid item quantity database in both text (TXT) and comma separated value (CSV) formats.

- F. Provide solutions to any unique problems that may arise during the design of this project or that may affect the constructability of this project.
- G. As part of this project, several bridges (to be determined) will incorporate CFRP (Carbon Fiber Reinforced Polymer) in lieu of traditional reinforcement and post tensioning materials. The proposed applications will include, but are not limited to CFRP deck reinforcement, CFRP grid barrier reinforcement, and CFRP transverse post tensioning.
- H. To assist the Vendor in implementing this material, Lawrence Technological University (LTU) will be involved in all aspects of the review of analysis, design, the progress of design details, calculations, construction and design drawings and documents, and verification of the use of proper technical data. LTU has been working on research and development of this technology, and has established design criteria and details. The Vendor shall allot adequate time for coordination and reviews with LTU as the final responsibility for the design is assumed to be that of the Vendor.
- I. The Consultant may be required to provide Design Services during the construction phase of this project. If Construction Assistance is required, then a separate authorization for those services will be issued.
- J. LTU will provide construction assistance to the Vendor due to the sensitivity of the materials, and will assist in the review of shop drawings. LTU will also sample the CFRP materials to be used for tests to verify proper mechanical characteristics. The Vendor shall allot adequate time for coordination of shop drawing reviews, and material sampling with LTU as the responsibility for final approval of shop drawings is assumed to be that of the Vendor.
- K. Preparation of any specifications and/or special provisions required to supplement MDOT's Standard Specifications for Construction.
- L. Meet with the MDOT Project Manager to review project, location of data sources and contact persons, and review relevant MDOT operations. The Consultant shall review and clarify project issues, data needs and availability, and the sequence of events and team meetings that are essential to complete the design by the project plan completion date. Attention shall be given to critical target dates that may require a large lead time, such as geotechnical requirements, ROW submittal dates, Railroad coordination requirements, utility conflict resolution, local agency meetings, etc.

- M. Maintain a Design Project Record which includes a history of significant events (changes, comments, etc.) which influenced the development of the plans, dates of submittals and receipt of information.
- N. **P/PMS TASK 3370 - PREPARE STRUCTURE STUDY**  
See Bridge Attachment C for details.
- O. **P/PMS TASK 3570 - PREPARE PRELIMINARY STRUCTURE PLANS**  
See Bridge Attachment C for details.
- P. **P/PMS TASK 3590 - REVIEW PRELIMINARY PLANS**  
See Bridge Attachment C for details.
- Q. **P/PMS TASK 3850 - DEVELOP STRUCTURE FINAL PLANS AND SPECIFICATIONS**  
See Bridge Attachment C for details.
- R. The Consultant shall submit a Pre-Final Design Package which shall consist of the following: all final detail sheets approximately 75% complete, all special provisions revised as requested at the GI meeting, and an updated cost estimate. GI comments should be reflected in all sheets. Slab and Screed sheets, and Bar Schedule sheets are not required.
- S. **P/PMS TASK 3870 - HOLD OMISSIONS/ERRORS CHECK (OEC) MEETING**  
See Bridge Attachment C for details.
- T. The Consultant representative shall record and submit type-written minutes for all project related meetings to the MDOT Project Manager within two weeks of the meeting. The Consultant shall also distribute the minutes to all meeting attendees. MDOT will provide and distribute official meeting minutes for the Base Plan Review Meeting (if meeting necessary) and The Plan Review Meeting.
- U. Attend information meetings (i.e., public hearings, open houses, etc.) with the public and public officials, if required, to assist in responding to concerns and questions from the Context Sensitive Solutions process. This may require the preparation of displays such as maps, marked-up plans, etc.
- V. Prepare and submit electronically (native format or Adobe PDF) any information, calculations, hydraulic studies, or drawings required by MDOT for acquiring any permit (i.e. NPDES, DEQ, etc.), approvals (i.e. county drain commission) and related mitigation. MDOT will submit permit requests.
- W. Attend any project-related meetings as directed by the MDOT Project Manager.

- X. The MDOT Project Manager shall be the official MDOT contact person for the Consultant **and shall be made aware of all communications regarding this project.** The Consultant must either address or send a copy of all correspondence to the MDOT Project Manager. This includes all Subcontractor correspondence and verbal contact records.
- Y. The Consultant shall contact the MDOT Project Manager whenever discoveries or design alternatives have the potential to require changes in the scope, limits, quantities, costs, or right-of-way of the project.

Work shall conform to current MDOT, FHWA, and AASHTO practices, guidelines, policies, and standards (i.e., Roadside Design Manual, Standard Plans, Drainage Manual, Roadside Design Guide, A Policy on Geometric Design of Highways and Streets, Michigan Manual of Uniform Traffic Control Devices, etc.).

Consultant is required to use MDOT's current version of Bentley MicroStation for CADD applications and Bentley GEOPAK for road design. Consultant shall comply with all MDOT CADD standards and file naming conventions.

### **III. PROJECT CONSTRUCTION COST**

- A. The estimated cost of construction is:

S12-82192	\$1,250,529
S14-82192	\$ 433,068
S15-82192	\$ 693,209
S03-82193	\$ 683,254
S05-82193	\$1,292,230
S08-82193	\$ 661,213
S11-4-82193	\$ 647,736
S13-82192	\$ 224,266
S16-82192	\$ 226,764
S01-82193	\$1,101,545
S07-82193	\$ 658,845
S09-82193	\$1,075,548
S17-82192	\$1,044,504
S04-82193	\$1,272,460
S10-82193	\$ 445,070
S11-3-82193	\$ 397,781

**CONSTRUCTION TOTAL: \$12,108,022**

The above construction total is the amount of funding programmed for this project. The Consultant is expected to design the project within the programmed amount.

**If at any time the estimated cost of construction varies by more than 5% of the current programmed amount, then the Consultant will be required to submit a letter to the MDOT Project Manager justifying the changes in the construction cost estimate.**

**V. MDOT RESPONSIBILITIES (GENERAL)**

- A. Schedule and/or conduct the following:
  - 1. Project related meetings.
  - 2. The Plan Review/Grade Inspection.
  - 3. Utility Meetings.
  - 4. Quantity summary sheets and final item cost estimates.
  - 5. Packaging of plans and proposal.
- B. Furnish Special Details and pertinent reference materials.
- C. Furnish prints of an example of a similar project and old plans of the area, if available.
- D. Coordinate any necessary utility relocations.
- E. Furnish diskette of file and instructions for the MDOT Stand Alone Estimator's Worksheet(SAEW).

**ATTACHMENT C**  
**CS: 82192, 82193 - JN: 76902, 79531, 79532 & 79535**  
**M-39 (Southfield Freeway) from M-10 to I-94**  
**Cities of Southfield, Detroit and Dearborn, Oakland and Wayne Counties**

**SCOPE OF WORK FOR CRASH ANALYSIS REPORTS**

The Consultant shall provide MDOT with a Crash Analysis Report, which shall detail the safety performance of the project location (includes not only the mainline, but all ramps, major and minor intersections, and crossovers within the project limits), and provide detailed graphic depiction of countermeasures, and cost/benefit analysis for crash concentration locations.

The Crash Analysis Report shall, at a minimum, compare the project location features (mainline, ramps, major intersections, minor intersections and cross overs) to regional averages, identify crash concentration locations, examine crash concentration locations for crash patterns and provide countermeasures for correctable crash patterns. The Consultant shall combine a thorough review of computer-based crash records with field reviews of the roadways characteristics (geometric and operational features shall be specifically noted), to identify crash concentration locations. The Consultant shall provide a Draft Crash Analysis Report and upon review and comment by MDOT, the Consultant shall make any changes identified and submit a Final Crash Analysis Report.

The Consultant shall at a minimum review and analyze the most recent three years of MDOT crash data. If there is a fatality within those three years, the Consultant shall review and analyze an additional 7 years of crash data. For the analysis, the Consultant shall stratify the data by location and the crash data shall also be aggregated by similar roadway segment characteristics. The Consultant shall quarry SEMCOG to determine regional crash averages which will provide a normative measure of comparison to aid in the identification of crash concentration locations.

The Consultant shall identify crash concentration locations and determine crash patterns. Based on the crash patterns identified for each crash concentration location, the Consultant shall develop proposed crash countermeasures. The countermeasures shall be graphically depicted, to scale, with sufficient detail to determine the countermeasures impact to the existing roadway and the proposed roadway improvement.

The countermeasures may range from simple sign / marking / signal modifications up through substantial reconstruction. The Consultant shall present countermeasures stratified into short and long-term solutions. The Consultant shall provide a construction cost estimate for each countermeasure using MDOT Pay Items and shall clearly identify any right-of-way impacts a countermeasure may have. The Consultant shall provide a full cost/benefit analysis for each countermeasure. The Consultant shall also evaluate the crash impacts on design exceptions sought.

**ATTACHMENT D**  
**CS: 82192, 82193 - JN: 76902, 79531, 79532 & 79535**  
**M-39 (Southfield Freeway) from M-10 to I-94**  
**Cities of Southfield, Detroit and Dearborn, Oakland and Wayne Counties**

**SCOPE OF WORK FOR DRAINAGE STUDY**

The Consultant is to conduct a site investigation of the drainage within the limits of the project. The purpose of this study is to determine where hydraulic analyses and/or surveys are required. If further hydraulic analyses and/or surveys are required, then MDOT will issue a separate authorization for those services.

**Work Steps:**

1. Prepare a typed report summarizing the drainage affected by the project. For each culvert carrying natural drainage within the MDOT Right-of-Way, provide the following information:
  - a. Stream name
  - b. Exact location of the culvert, including Section, Town, Range, and Township
  - c. Size, type, and condition of culvert
  - d. Any evidence of scour or erosion
  - e. Any evidence that the structure is undersized
  - f. Any county drains
  - g. Photographs of the upstream face, downstream face, looking upstream, and looking downstream, as well as any drainage structures, buildings, or farmland that may affect or be affected by the culvert
  - h. Drainage area, including delineation on a USGS quadrangle map (or local contour map, if more up-to-date)
  - i. Type of work proposed, including existing and proposed lengths
2. The report must include any other effects on the drainage; for example, a raise in road grade or widening.
3. Submit the drainage study to the MDOT Project Manager for review and approval by the Design Engineer – Hydraulics/Hydrology.
4. Receive any items returned by the MDOT Project Manager as incomplete or deficient.
5. Make necessary changes and resubmit the incomplete items, including a written response to all comments.



**ATTACHMENT E**  
**CS: 82192, 82193 - JN: 76902, 79531, 79532 & 79535**  
**M-39 (Southfield Freeway) from M-10 to I-94**  
**Cities of Southfield, Detroit and Dearborn, Oakland and Wayne Counties**

**SCOPE OF WORK FOR MAINTAINING TRAFFIC**

The Consultant shall coordinate the maintaining traffic plans with other projects located south of I-94, and administered by the MDOT Taylor Transportation Service Center. The Consultant shall contact the Project Manager to obtain a current list of projects and contact persons prior to developing the Maintaining Traffic Plans.

The Consultant shall also provide MDOT with a minimum of 2 different alternative approaches to maintaining traffic (including staging) for the work associated with this project and including all the projects, north of I-94, listed below.

<u>Job Number</u>	<u>Description</u>	<u>Location</u>
82797	Freeway Sign Replacement	M-39 from M-10 to I-94
86919, 86926	Deck Patching	M-39 from Paul St. to Outer Drive
87496	Median Fwy. Ltg. Install.	M-39 from McNichols to M-10
TBD	Proposed CPM Project	M-39 from McNichols to I-94

The alternative maintaining traffic plans shall include, but are not limited to:

1. Gather existing data for the project including but not limited to average daily traffic counts, speed limits, crash data, lane widths, etc.
2. Perform a crash analysis using data from the CRIS and/or TMS databases, MDOT will provide the consultant with a one-line listing of data. The crash analysis and recommendations must be in compliance with 3R/4R guidelines. Provide MDOT with viable solutions and recommendations based on the crash analysis.
3. Determine queue lengths and user delay costs for each alternative maintaining traffic plan.
4. Prepare a cost estimate of the maintaining traffic quantities for each maintaining traffic alternative.
5. Gather information in regards to local noise ordinances, local considerations, special events, detour routes, etc. that may impact the maintaining traffic plan and incorporate those findings into each alternative maintaining traffic plan.
6. Develop maintaining traffic typicals, diagrams, signing details, temporary pavement markings, signal modifications, cross sections for staging, etc. for each maintaining traffic alternative.

7. The Consultant is to summarize and compare the maintaining traffic plan alternatives in regards to construction time and cost of implementation. This summary shall include both a written summary and a comparison chart with each alternative giving a description, advantages, disadvantages, project duration, lane reductions (example – the amount of delays M-8 would be restricted to one-lane, two-lane, etc. – if applicable), and cost.
8. The Consultant is to schedule and attend all meetings related to maintaining traffic. The meetings shall be schedules in accordance with the project manager's schedule.

**ATTACHMENT F**  
**CS: 82192, 82193 - JN: 76902, 79531, 79532 & 79535**  
**M-39 (Southfield Freeway) from M-10 to I-94**  
**Cities of Southfield, Detroit and Dearborn, Oakland and Wayne Counties**

**SCOPE OF WORK FOR UTILITY COORDINATION**

For the purpose of this scope “utility coordination” means the Consultant shall participate in all stages of the Department’s utility coordination process. It is the intent of this scope that the Consultant selected as a result of this solicitation employs qualified, competent, and experienced personnel to provide the services set forth herein.

The Consultant selected shall be capable of providing the following services pertaining to utility coordination work, including, but not limited to:

1. Identification of existing/proposed utility owners and their facilities.
2. Resolution of conflicts between utility facilities and proposed construction.
3. Documentation of utility company activities.
4. Evaluation and certification of utility relocation schedules for compatibility to the Department’s project schedule.

**GENERAL REQUIREMENTS**

The Consultant is responsible for taking the necessary steps to insure appropriate utility coordination for the project. The Consultant is expected to participate in all stages of the MDOT utility coordination process, including but not limited to the following: scope meetings, design meetings, pre-advertisement meetings, pre-construction meetings, field inspections, utility permit reviews, plan reviews, and construction phase services. In addition, the Consultant shall provide the following services:

1. Schedule and conduct utility meetings, as necessary, to resolve conflicts between utility facilities and proposed construction. Moderate and record meeting minutes, distribute to all in attendance plus the appropriate MDOT Region/TSC Utilities/Permits Engineer and the MDOT Project Manager. The meetings, as a minimum will identify conflicts, discuss possible design modifications, develop utility relocation schemes, review the schedule of MDOT construction activities, and develop a coordinated utility activity schedule. Include resolution of all utility conflicts and utility coordination needs in the proposed project schedule.
2. Provide bi-weekly status reports to the appropriate MDOT Region/TSC Utilities/Permits Engineer, MDOT Project Manager and the MDOT Lansing Utilities-Permits office and any other appropriate personnel as directed by the MDOT Project Manager, Abel Sahloul. The report, at a minimum, should display the control section, project number, project location and description, report date, status of each utility and date information is

expected back or when action is to be taken. Develop and maintain a status report (i.e. spreadsheet, log, etc.) regarding the project's utility status. Depending on the project, these status reports may be reduced to monthly, at the request of the Project Manager.

3. Conduct or participate in meetings convened for the purpose of utility betterments (i.e. new water main and communication facilities, etc.). Develop corridor schemes and utility construction schedules.
4. Provide technical assistance to MDOT's Design Division and design consultants regarding utility relocations and project impacts. Assure that all proposed utility relocation work, either private or municipal force account work, is compatible with the proposed project and meets MDOT and other applicable standards.
5. Review utility relocation plans for compatibility with the proposed MDOT project. Confirm that all necessary utility relocation permits are submitted to the appropriate MDOT Region/TSC Utilities/Permits Engineer for issuance. Follow-up with utility companies to ensure that their utility relocations are progressing and will not adversely affect the project's schedule.
6. Prepare a Notice to Bidders and any necessary Utility Coordination Clauses. These need to be submitted to the appropriate MDOT Region/TSC Utilities/Permits Engineer by a deadline to be determined by the Project Manager.
7. The Consultant may be required to provide Design Services during the construction phase of this project, including utility alignment staking and inspection. If Construction Assistance is required, then a separate authorization for those services will be issued.

## **PLAN DISTRIBUTION AND UTILITY INFORMATION PROCUREMENT**

The Consultant will be required to distribute plans on an as-needed basis to the utility companies. At a minimum the following distributions shall take place:

1. The Consultant shall verify that base plans have been sent to utility companies within the project area. This will consist of an informational letter and two sets of preliminary plans (some companies may require four sets), describing the scope of the project. Initial contact should be made with all utility companies that may have facilities in the project area. Four to six weeks should be allowed for utility companies to respond back with one set of marked plans showing their facilities, copies of their "As Built" plans, or written confirmation that they have no facilities in the project area. This information will then be forwarded to the Design Project Manager.
2. Collect and compile utility company responses from each utility company. Follow up with non-responsive utility companies to ensure a response is received. Establish design contacts and if different, construction contacts for the project. Review the plan note

sheets and verify with the utility company that the utility company names, addresses, contacts and phone numbers are accurate.

3. Distribute Department plans at approximately 50 percent completion. These plans should have the utility locations plotted and provide sufficient detail for utility companies and the utility coordinator to determine conflicts (i.e. storm sewer design). The Department's standard plan distribution letter, authorizing utility companies to begin preliminary engineering and also notifying the utility company of their responsibility to relocate facilities under Act 368, P.A. of 1925, needs to be included with this plan distribution.
4. Copies of any correspondence sent to any utility company should be sent to the appropriate MDOT Region/TSC Utilities/Permits Engineer, MDOT Project Manager and the MDOT Lansing Utilities-Permits Office and any other appropriate personnel unless otherwise directed.

## **PERMIT REVIEWS**

Review utility relocation plans and new permit applications for compatibility with the proposed MDOT project. Confirm that all necessary utility relocation permits are submitted to the appropriate MDOT Region/TSC Utilities/Permits Engineer for issuance. To ensure that utility relocations are progressing and will not adversely affect the project's schedule, follow up with the appropriate utility companies.

## **REIMBURSABLE UTILITY RELOCATIONS**

Ensure that eligible reimbursable utility relocations, under Federal-Aid Policy Guide 23 CFR 645A and 645B and MDOT Utility Accommodation Policy are identified. Confirm that the utility companies submit the necessary information (i.e. permit applications, property rights, estimates, etc.) as to meet the aforementioned guidelines to the appropriate MDOT Region/TSC Utilities/Permits Engineer for processing and authorization.

## **DESIGN ANALYSIS AND RECOMMENDATIONS**

When the Consultant has obtained all necessary utility information, the Consultant shall determine to what extent the proposed roadway and/or bridge improvements will impact the existing utilities. The Consultant shall prepare a report outlining avoidance alternates, required adjustments, relocations, and cost estimates to perform those relocations.

## **STAKING, PERMIT INSPECTION AND CONSTRUCTION PHASE SERVICES**

The Consultant may be requested to provide any needed alignment staking for utility relocations. Staking shall be consistent with the project's survey control. The Consultant will be responsible

for the accuracy, per applicable survey standards, when performing survey work. The Consultant performing any surveys must be on the Department's pre-approved surveyors list.

The Consultant may be asked to oversee and inspect utility relocations. Reports of this activity and the Department's Permit Inspection Report (Form #2213) will need to be sent to the appropriate Region/TSC Utilities/Permits Engineer.

Construction phase services may be requested. This may include attending the preconstruction meeting and presenting the utility coordination work. It also may involve working with the Department's Resident Engineer and utility company to resolve utility conflicts discovered during construction. If Construction Assistance is required, then a separate authorization for those services will be issued.

## **CERTIFICATION**

This certification will include all necessary copies of correspondence and will be signed by a duly authorized representative of the firm. After certification, the project files will be forwarded to the appropriate MDOT Region/TSC Utilities/Permits Engineer. The Consultant will certify to the MDOT Region/TSC Utilities/Permits Engineer the following:

1. All utility work has been completed or that all arrangements have been made for it to be undertaken and completed as required for proper coordination with the projects construction schedule.
2. Plans were sent to all utility agencies, responses were received, and no utility relocation is required.

## **MDOT RESPONSIBILITIES**

1. The MDOT Region/TSC Utilities/Permits Engineer or appropriate representative will notify the Consultant when to proceed with work by issuance of a work authorization. Work authorizations shall identify the project's location, scope, and required "due dates" to complete the utility coordination.
2. Provide the Consultant, when appropriate, survey control to be used for any required surveying the Consultant may need to perform.
3. Provide a preliminary list of utility companies within the project limits. This list may not be 100% accurate and/or complete. The Consultant is responsible to identify all known and unknown utility facilities within the project limits.
4. Provide the Consultant with any appropriate Department form letters.

5. The Department shall have the authority to suspend the work, in full or in part, for such period or periods as may be deemed necessary due to conditions that are considered unfavorable work performance, or for the failure on the part of the Consultant to comply with any or all provisions of the contract. Such suspension shall be ordered in writing, giving in detail the reasons for the suspension.

**ATTACHMENT G**  
**CS: 82192, 82193 - JN: 76902, 79531, 79532 & 79535**  
**M-39 (Southfield Freeway) from M-10 to I-94**  
**Cities of Southfield, Detroit and Dearborn, Oakland and Wayne Counties**

**CONSTRUCTION CRITICAL PATH NETWORKS**

**I. INTRODUCTION**

The Consultant is required to submit a Construction Critical Path Network at various points in the design process. Refer to the following:

P/PMS TASK 3580 – DEVELOP PRELIMINARY PLANS

P/PMS TASK 3830 – COMPLETE THE CONSTRUCTION ZONE TRAFFIC CONTROL PLAN

P/PMS TASK 3840 – DEVELOP FINAL PLANS AND SPECIFICATIONS

Construction Critical Path Networks are often needed to develop the progress schedule for a project. They are required on any project designated to include an Incentive/Disincentive or Special Liquidated Damages clause. Construction Critical Path Networks are also recommended for projects with the following characteristics:

1. New construction.
2. Major reconstruction or rehabilitation on an existing roadway that will severely disrupt traffic.
3. Unique or experimental work.
4. More than one construction season.
5. Complex staging (multiple stages with traffic shifts).

As noted in MDOT's Construction and Technology Instructional Memorandum 1997-7, Progress Schedule Determinations/Critical Path Rates,

*“Preparation of Critical Path is a requirement on all Consultant-designed projects, regardless of the project type or complexity.”*

The MDOT Resident Engineer assigned to the project should be consulted when developing Construction Critical Path Networks.

MDOT requires the precedence diagramming method. The Consultant will submit this network in MPX version 4.0.



## II. NETWORK DEVELOPMENT

The network will be defined using the following steps.

1. Activity definition.
2. Activity sequencing.
3. Duration estimation.
4. Schedule development.

### 1. ACTIVITY DEFINITION

The Consultant will define the specific activities in enough detail so that the proper objectives will be met. The Consultant must identify assumptions (those factors considered true, real or certain). Supporting detail for the activities should be documented and organized as needed to simplify the review of the activities by MDOT personnel.

The Consultant Critical Path Network must start with **Letting Date** as the first activity and terminate with the **End of Project** as the finish activity.

A sufficient number of activities will be required with sufficient detail so that the controlling construction operation(s) may be identified. Notation on each activity shall include a brief work description and activity time duration.

### 2. ACTIVITY SEQUENCING

Activity sequencing involves identifying and documenting interactivity dependencies. The Consultant must sequence activities accurately to support later development of a realistic and achievable construction schedule. Two types of dependencies should be considered. Mandatory dependencies are inherent in the nature of the work being done, such as construction sequencing. Discretionary dependencies are based on a knowledge of the work to be done. Constraints are used to show how the activities relate to each. The Consultant must include documentation supporting all discretionary dependencies used in the project. All activities must lead to another activity. Only Start to Start, Finish to Finish and Finish to Start relationships will be allowed. All logic shall show how the given activity is dependent on its preceding activities.

### 3. DURATION ESTIMATION

After the Consultant has sequenced the activities, the Consultant should determine the activity duration. Activity duration estimating involves assessing the number of work periods likely to be needed to accomplish each activity. Duration (working days): No activity will have durations greater than 20 working days unless approved by the Engineer. Activities that will be allowed to exceed 20 working days include, but are not limited to, working drawing approvals or other activities not under the control of the Contractor. If requested by the Engineer, the Consultant shall explain the reasonableness of activity time durations. The approved MDOT production rates will be used in estimating activity duration. These are available in the Supplemental Information section

of this attachment. The Consultant must document and submit all assumptions made during the duration estimation to MDOT.

#### **4. SCHEDULE DEVELOPMENT**

The activity sequencing, duration estimations and the calendars are combined to create the construction schedule. During the development of the schedule, the Consultant will verify:

1. The required schedule to build the project.
2. The constructability of the project.
3. If the maintaining traffic scheme will work.
4. If seasonal limitations will affect the construction.
5. Any other project specific considerations.

The MDOT Calendars will be used by the Consultant in developing the network. The calendars are based on a 4, 5 or 6 day work week. The MDOT Calendars are included in the Supplemental Information section of this attachment.

At this point, there should be no negative float in the network. If there is, there is an error in the network and the error must be corrected before network submittal.

All summary tasks shall be removed prior to submittal to MDOT Project Manager.

### **III. DELIVERABLES**

After this final step, the design Consultant will submit the finished CPM schedule to MDOT.

#### **1. Documents**

- A. 11" x 17" PDF plot of network. The critical path shall be clearly identified on the plot. A larger plot may be required for complex networks.
- B. Work Day / Completion Date Determination Worksheet.
- C. List of any other assumptions or controlling factors used in creating the network. For example, permit or maintaining traffic restrictions.

#### **2. Electronic Format**

This section sets the requirements for the electronic submittal of the Consultant's Construction Network. All networks shall be submitted on a 3.5 floppy disk (or via E-mail) using one of the following formats:

- A. **Standard Electronic Media Format:** This is a standard ASCH text file containing the data elements below, in the order specified. This file can be

created using any text editor or word processing application (i.e., MS-Word, WordPerfect, Notepad, Write) but must be saved as an ASCII file.

The **first line** will provide a descriptive header describing the submittal and containing:

Control Section  
Job Number  
Route  
Consultant Name  
Date of Submittal

The next line will be **blank**, followed by multiple data lines.

Each **data line** will contain one record pertaining to one task of the job. Separate data fields by a comma. Fields within each task line are as follows:

(Note that the term “task” is synonymous with “activity”. Leave fields that are not required blank).

- (1) Task # (Job # followed by a hyphen followed by this task’s unique 4 digit task number. This is the Preceding Event Activity Code)
- (2) Description of Task, Milestone or Hammock, blank if this record is a constraint
- (3) Calendar (see attached list)
- (4) Duration of task, blank for constraints
- (5) Task # of the next task (Succeeding Event) – leave blank if this record is not a constraint or hammock
- (6) Type of constraint (FS, SS, FF) – leave blank if this record is not a constraint
- (7) Delay, if required
- (8) Original “Baseline” Start Date
- (9) Original “Baseline” Finish Date
- (10) Current (forecast) Start Date (early start)
- (11) Current (forecast) Finish Date (early finish)
- (12) Estimated completion date (if different from early start + current duration)
- (13) Late Start Date
- (14) Late Finish Date
- (15) Actual Start Date
- (16) Actual Finish Date

Example – each line contains the following:

Task # (preceding event), Description, Calendar, Duration, Next Task # (succeeding event), Constraint Type, Delay, Baseline Start, Baseline

Finish, Early Start, Early Finish, Estimated Completion Date, Late Start, Late Finish, Actual Start, Actual Finish, Total Float.

- B. **Primavera Project Planner(P3) 2.0 Export Procedure:** Users who have Primavera Project Planner(P3) version 2.0 can automatically create an export file by following the export procedure below. **Users having an older version of Primavera may use the applications export feature only if they are able to include all the data elements listed in the version 2.0 format.**

1. Choose Tools, Project Utilities, **EXPORT**.
2. Click **ADD**, then click **OK** to accept the next sequential ID number, or type a unique number to identify the specifications and click **OK**.
3. Enter a description for the specification in the Title field.
4. **Specify data items to export.**

#### **Activities**

- Select **Contents of List**
- Use the Description column to specify which data items to export
- To add items, click the right mouse button in the Description column and choose from the list. Suggested items include: **Activity ID, Activity Description, Actual Start, Actual Finish, Calendar ID, Early Start, Early Finish, Late Start, Late Finish, Original Duration.**
- Select **All Current, All Target, or All Target2**
- Set Description Length to 48

**OR**

#### **Constraints**

- Select **Successor relationships** – Choose this option to export Activity IDs and their corresponding successors only. Lags and relationship types will be displayed in this output file.

5. Click **FORMAT** in Export Dialog Box.
6. In the Output file, section, enter a new name and path (ex. A:\actexp or A:\conexp). Do not include a file extension.
7. In the type field, click the minimize button and choose the **[.PRN]** – **ASCII** file format for the output file.
8. Select **CALENDAR** for Date Format.
9. Set ASCII Output Field Separation to **1** and Blank column width to **0**.
10. Click **RUN**.
11. In the Output Options dialog box, click on **OK**.

**NOTE: A COMPLETED FILE EXPORT WILL CONSIST OF 2 EXPORT FILES (ACTIVITIES & CONSTRAINTS).**

- C. **Microsoft Project Export Procedure:** Users of Microsoft Project Version 4.0 and above can create a Microsoft Project Exchange (MPX) file by following the procedure below.
1. Choose File, Save As from the main menu.
  2. In the Save File as Type box, Select **MPS 4.0**.
  3. On the drive box select a: or whichever drive is the 3.5" Floppy drive.
  4. Click on **OK**.
- This saves the file in MPX format.
- D. **Primavera Sure Track:** Users of Sure Track Version 2.0 and above can create a Microsoft Project Exchange (MPX) file by following the procedure below.
1. Choose File, Save As from the main menu.
  2. In the filename box input a filename.
  3. In the Save File as Type box, Select **MPS**.
  4. On the drive box select a: or whichever drive is the 3.5" Floppy drive.
  5. Click on **OK**.
- This saves the file in MPX format.
- E. **Scitor Project Scheduler 7 Export Procedure:** Users of Scitor Project Scheduler Version 7 and above can create a Microsoft Project Exchange (MPX) file by following the procedure below.
1. Choose File, Save As from the main menu.
  2. In filename box, select a filename.
  3. In the Save File as Type box, Select MPX.
  4. On the drive box select a: or whichever drive is the 3.5" Floppy drive.
  5. Click on **OK**.
- This saves the file in MPX format.
- F. **Export Files with Other Scheduling Applications:** Most scheduling packages have export functions similar to those described above. If the Consultant chooses to use packages with export capabilities, they shall include all items listed in the Standard Media Format in a text or ASCII type file.

#### IV. SUPPLEMENTAL INFORMATION

##### A. MDOT CRITICAL PATH-CONSTRUCTION TIME ESTIMATES

###### Drainage

###### Cross Culverts

Rural Highways	44 yd./day
Expressways	55 yd./day
Large Headwalls	5 days/unit
Slab or Box Culverts	5 days/pour
Plowed in Edge Drain (production type project)	4921 yd./day
Open Graded Underdrain (production type project)	1312 yd./day

###### Sewers

0m-5m (up to 60 in. (1500mm))	44 yd./day
0m-5m (over to 60 in. (1500mm))	27 yd./day
5m-over (up to 60 in. (1500mm))	27 days/unit
5m-over (over to 60 in. (1500mm))	22 yd./day
Jacked-in-place	14 yd./day
Including excavation pit & set up	Min. 5 days
Tunnels	
Hand mining	9yd./day
Machine mining	22 yd./day
Including excavation pit & set up	Min. 5 days

###### Manholes

3 units/day

###### Catch Basin

4 units/day

###### Utilities

Water Main (up to 16 in. (400 mm))	109 yd./day
Flushing, Testing & Chlorination	4 days
Water Main (20 in. (500 mm) – 40 in. (1050 mm))	27 yd./day
Flushing, Testing & Chlorination	5 days
Order & Deliver 24 in. (600 mm) HP Water Main	50 days/order
Gas Lines	109 yd./day

###### Earthwork and Grading

Embankment (CIP)
Excavation and/or Embankment (Freeway)
Excavation and/or Embankment (Reconstruction)
Embankment (Lightweight Fill)
Muck (Excavated Waste & Backfill)
Excavation (Widening)
Grading (G & DS)
Subbase and Selected Subbase (up to 8 yd. (7.4 m))
Subbase and Selected Subbase (8 yd. (7.4 m) & over)

###### Metro Exp

1962 yd. <sup>3</sup> /day
1962 yd. <sup>3</sup> /day
981 yd. <sup>3</sup> /day
392 yd. <sup>3</sup> /day
1962 yd. <sup>3</sup> /day
656 yd./day
820 yd./day
656 yd./day
492 yd./day

###### Rural

6932 yd. <sup>3</sup> /day
12033 yd. <sup>3</sup> /day
4970 yd. <sup>3</sup> /day
785 yd. <sup>3</sup> /day

Subgrade Undercut & Backfill	1962 yd. <sup>3</sup> /day
Subbase & Open-Graded Drainage Course	492 yd./day
<b>Surfacing</b>	
Concrete Pavement (8 ft. (7.3 m))	492 yd./day
Including Forming & Curing	Min. 7 days
Bituminous Pavement (8 ft. (7.3 m))	1312 yd./day/course
Concrete Ramps (5.6 yd. (4.9 m))	328 yd./day
Including Forming & Curing	Min. 7 days
Curb (1 side)	820 yd./day
Concrete Shoulder-Median	1435 yd. <sup>2</sup> /day
Bituminous Shoulders (1 side per course)	820 yd./day
Sidewalk	215 yd. <sup>2</sup> /day
Sidewalk (Patching)	78 yd. <sup>2</sup> /day
<b>Structures</b>	
Sheeting (Shallow)	33 yd./day
General Excavation at Bridge Site	981 yd. <sup>3</sup> /day
Excavation for Substructure (Footings)	1 unit/day
Piles (12 m)	15 piles/day
Substructure (Piers & Abutments)	15 days/unit
Order and Delivery of Beams	
Plate Girders	100-120 days/order
Rolled Beams	90-120 days/order
Concrete Beams	50 days/order
Erection of Structural Steel	3 days/span
Bridge Decks	
Form & Place Reinforcements (66 yd. (60 m)	
Structure)	15 days
Pour Deck Slab (1-1/5 days/pour)	2 days/span
Cure	14 days
2 Course Bridge Decks	
Add 9 days for Second Course Latex	
Add 12 days for Second Course Low Slump	
Sidewalks and Railings	
Sidewalks and Parapets	5 days/span
Slip Formed Barriers	2 days/span
Clean Up	10 days
Pedestrian Fencing	
Shop Plan Approval & Fabrication	1-2 months
Erection	1 week/bridge
Rip Rap Placement	
Bucket Dumped	504 yd. <sup>3</sup> /day
Bucket Dumped and Hand Finished	171 - 684 yd. <sup>3</sup> /day

<b>Retaining Walls</b>	1 Panel/day min. 10 days
<b>Railroad Structures</b>	
Grade Temporary runaround	981 yd. <sup>3</sup> /day
Ballast, Ties & Track	55 yd./day
Place Deck Plates	5 days/span
Waterproof, Shotcrete & Mastic	5 days/span
<b>Railroad Crossing Reconstruction</b> (depends on whether concrete base is involved)	10 – 15 work days
<b>Temporary Railroad Structures</b>	
Order & Deliver Steel	55 days/order
Erect Steel	1 day/span
Ties and Track	3 days/span
<b>Pumphouse</b>	
Structure	30 days/structure
Order & Deliver Electrical & Mechanical Equipment	90 days
Install Electrical & Mechanical Equipment	30 days
<b>Miscellaneous</b>	
Removing Old Pavement	66 yd./day
Removing Old Pavement for Recycling (8 yd. (7.3m))	492 yd./day
Crushing Old Concrete for 6A or OGDC	1485 tons/day
Removing Trees (Urban)	15 units/day
Removing Trees (Rural)	30 units/day
Removing Concrete Pavement	538 yd. <sup>2</sup> /day
Removing Sidewalk	299 yd. <sup>2</sup> /day
Removing Curb & Gutter	492 yd. <sup>2</sup> /day
Removing Bituminous Surface	1914 yd. <sup>2</sup> /day
Conditioning Aggregate	984 yd./day
Bituminous Base Stabilizing	2990 yd. <sup>2</sup> /day
Ditching	656 yd./day
Trenching for Shoulders	820 yd./day
Station Grading	667 yd./day
Clearing	9568 yd. <sup>2</sup> /day
Restoration (Topsoil, Seeding, Fertilizer & Mulch)	1973 yd. <sup>2</sup> /day
Sodding	2512 yd. <sup>2</sup> /day
Seeding	47840 yd. <sup>2</sup> /day
Guard Rail	252 yd./day
Fence (Woven Wire)	394 yd./day
Fence (Chain Link)	164 yd./day
Clean Up	656 yd./day
Concrete Median Barrier	328 yd./day



Cure	Min. 7 days
Reroute Traffic (Add 4 days if 1 <sup>st</sup> . item)	1 day/move
Concrete Glare Screen	492 yd./day
Light Foundations	6 units/day
Order & Delivery	6 – 8 week/order
Remove Railing & Replace with Barrier (1 or 2 decks at a time)	4 days/side
Longitudinal Joint Repair	1750 yd./day
Crack Sealing	5249 yd./day
Joint and Crack Sealing	547 yd./day
Repairing Pavement Joints – Detail 7 or 8	219 yd./day
Seal Coat	6999 lane yd./day
Diamond Grinding/Profile Texturing Concrete	3947 yd. <sup>2</sup> /day
Rest Area Building	
Order Material	3 months
Construct Building	9 months
Tower Lights	
Order and Deliver Towers	100 days
Weigh-In-Motion	
Order and Deliver Materials	1 month – 6 weeks
O & D with Installation	3 months
Raised Pavement Markers	300 each/day
Attenuators	2 each/day
Shoulder Corrugations, Ground or Cut	5 – 6 mi./side/day
Aggregate Base	3468 yd. <sup>2</sup> /day
Aggregate Shoulders	345 yd. <sup>3</sup> /day
Freeway Signing – 3# Post Type	50 signs/day

**Concrete Joint Repair (High Production – Projects with > 1000 patches)**

Average (2 yd. (1.8m))	50 patches/day
Large (> 2 yd. (1.8m))	598 yd. <sup>2</sup> /day

**Bridge Painting**

108 yd.<sup>2</sup>/day

**Pin and Hanger Replacement**

3 beams/day

Order Pin & Hanger

60 days

**Bridge Repair**

Scarifying (including Clean Up)	11960 yd. <sup>2</sup> /day
Joint Removal (including Clean Up)	4 yd./day
Forming & Placement	3.8 yd./day
Hydro-Demolishing	328 yd./day
Barrier Removal	16 yd./day
Placement	49 yd./day
Hand Chipping (Other than Deck)	0.31 yd. <sup>3</sup> /person/day
Shoulder Corrugations, Ground or Cut	5 – 6 mi./side/day
Casting Latex Overlay	273 yd./day

Curing Overlay	
Regular	4 days
High Early	1 day
Thrie Beam Retrofit	33 yd./day
Beam End Repairs	
Welded Repairs	0.75 days/repair
Bolted Repairs	0.50 days/repair
Bolted Stiffeners (Pair)	0.25 days/repair
Grind Beam Ends	0.25 days/repair
Welded Stiffeners (Pair)	0.25 days/repair
H-Pedestal Repairs:	
Welded Repair	0.50 days/each
Replacement	1 day/each
Deck Removal	281 yd. <sup>2</sup> /day

### **Surfacing - Bituminous**

Metro-Primary (< (19800 tons (18000 mtons))	
Paving	594 tons/day
Joints	164 yd./day
Cold Milling	4066 yd. <sup>2</sup> /day
Aggregate Shoulders	990 tons/day
Metro-Primary (> (19800 tons (18000 mtons))	
Paving	594 tons/day
Joints	219 yd./day
Cold Milling	8970 yd. <sup>2</sup> /day
Metro Interstate (> (19800 tons (18000 mtons))	
Paving	1210 tons/day
Joints	394 yd./day
Aggregate Shoulders	990 tons/day
Urban Primary (< (19800 tons (18000 mtons))	
Paving	704 tons/day
Joints	109 yd./day
Cold Milling	2033 yd. <sup>2</sup> /day
Rubbilizing	2033 yd. <sup>2</sup> /day
Aggregate Shoulders	495 tons/day
Urban Primary (> (19800 tons (18000 mtons))	
Paving	1100 tons/day
Joints	131 yd./day
Cold Milling	2033 yd. <sup>2</sup> /day
Aggregate Shoulders	550 tons./day
Urban Interstate (> (19800 tons (18000 mtons))	
Paving	1320 tons/day
Joints	241 yd./day
Cold Milling	2033 yd. <sup>2</sup> /day
Rubbilizing	6937 yd. <sup>2</sup> /day
Aggregate Shoulders	704 tons/day

Rural Primary (< (19800 tons (18000 mtons))	
Paving	704 tons/day
Joints	131 yd./day
Cold Milling	649 tons/day
Crush & Shape	11960 yd. <sup>2</sup> /day
Aggregate Shoulders	704 tons/day
Rural Primary (> (19800 tons (18000 mtons))	
Paving	1210 tons/day
Joints	164 yd./day
Cold Milling	880 tons/day
Crush & Shape	11960 yd. <sup>2</sup> /day
Rural Interstate (> (19800 tons (18000 mtons))	
Paving	1329 tons/day
Joints	214 yd./day

## B. WORKSHEET

### WORK DAY/COMPLETION DATE DETERMINATION

CS: \_\_\_\_\_ JN: \_\_\_\_\_

DESCRIPTION OF WORK: \_\_\_\_\_

MAJOR WORK ITEM	PRODUCTION QUANTITY	RATE	ESTIMATED TIME
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This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

TOTAL ESTIMATED TIME:

COMPLETION DATE: \_\_\_\_\_ (Calendar Days or Work Days)

COMMENTS:

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### C. MDOT CALENDARS

The following are the MDOT 4, 5 and 6 day calendars:

CALENDAR	DESCRIPTION	START	FINISH
1	Std – Apr 16 – Nov 15 – 4 day	APR 16	NOV 15
2	LP – Bit Stab – 4 day	MAY 15	OCT 15
3	UP – Bit Stab – 4 day	JUN 01	OCT 01
4	LP S of M-46 – Bit Pave – 4 day	MAY 05	NOV 15
5	LP N of M-46 – Bit Pave – 4 day	MAY 15	NOV 01
6	UP – Bit Pave – 4 day	JUN 01	OCT 15
7	LP – Bit Seal Coat – 4 day	JUN 01	SEP 15
8	LP – Bit Seal Coat – 4 day	JUN 15	SEP 01
9	Tree Planting – Deciduous – 4 day	MAR 01 OCT 01	MAY 15 NOV 15
10	Tree Planting – Evergreen – 4 day	MAR 01	JUN 01
11	South LP – Restoration – 4 day	MAY 01	OCT 10
12	North LP – Restoration – 4 day	MAY 01	OCT 01
13	UP – Restoration – 4 day	MAY 01	SEP 20
14	Full Year – Winter Work – 4 day	JAN 01	DEC 31
21	Std – Apr 16 – Nov 15 – 5 day	APR 16	NOV 15
22	LP – Bit Stab – 5 day	MAY 15	OCT 15
23	UP – Bit Stab – 5 day	JUN 01	OCT 01
24	LP S of M-46 – Bit Pave – 5 day	MAY 05	NOV 15
25	LP N of M-46 – Bit Pave – 5 day	MAY 15	NOV 01
26	UP – Bit Pave – 5 day	JUN 01	OCT 15
27	LP – Bit Seal Coat – 5 day	JUN 01	SEP 15
28	UP – Bit Seal Coat – 5 day	JUN 15	SEP 01
29	Tree Planting – Deciduous – 5 day	MAR 01 OCT 01	MAY 01 NOV 15
30	Tree Planting – Evergreen – 5 day	MAR 01	JUN 01
31	South LP – Restoration – 5 day	MAY 01	OCT 10
32	North LP – Restoration – 5 day	MAY 01	OCT 01
33	UP – Restoration – 5 day	MAY 01	SEP 20
34	Full Year – Winter Work – 5 day	JAN 01	DEC 31
35	Full Year – Expedited – 6 day	JAN 01	DEC 31

**ATTACHMENT H**  
**CS: 82192, 82193 - JN: 76902, 79531, 79532 & 79535**  
**M-39 (Southfield Freeway) from M-10 to I-94**  
**Cities of Southfield, Detroit and Dearborn, Oakland and Wayne Counties**

**MONTHLY PROGRESS REPORTS**

The first two pages of this attachment are the necessary layout of the Monthly progress reports and the last three pages are a completed example.

**Control Section 00000**  
**Job Number 00000C**  
**Structure Number S00**  
**Date 00/00/00**

**MONTHLY PROGRESS REPORT**

- A. Work accomplished during the previous month.
- B. Anticipated work items for the upcoming month.
- C. Real or anticipated problems on the project.
- D. Update of previously approved detailed project schedule (attached), including explanations for any delays or changes.
- E. Items needed from MDOT.
- F. Copy of Verbal Contact Records for the period (attached).

**Structure Number – Control Section – Job Number**  
**Route, Location Description**  
Design Schedule as of 00/00/00

**LIST TASKS, SUBMITTALS, APPROVALS AND MEETINGS AS OUTLINED IN SCOPE OF DESIGN SERVICES AS NEEDED. THIS LIST IS JUST AN EXAMPLE.**

Original Authorized Start Date	Original Authorized Finish Date	(Anticipated) or <b>Actual</b> Start Dates	(Anticipated) Finish Dates	Task	Task Description
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	??	Initial project meeting.
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	3330	Conduct Design Survey.
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	3360	Prepare Base Plans.
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>		Submit Base Plans.
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	3580	Develop Preliminary Plans.
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	3390	Develop Construction Zone Traffic Control Concepts.
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	3540	Develop Construction Zone Traffic Control Plans.
00/00/00	00/00/00	00/00/00	<b>00/00/00</b>	3550	Develop Preliminary Traffic Operations Plan.
00/00/00	00/00/00	00/00/00	<b>00/00/00</b>	3351	Review & Submit of Preliminary Right-Of-Way Plans.
00/00/00	00/00/00	00/00/00	<b>00/00/00</b>		Submittal of The Plan Review Package.
00/00/00	00/00/00	00/00/00	<b>00/00/00</b>		Completion of the Plan Review Meeting.
00/00/00	00/00/00	00/00/00	<b>00/00/00</b>	3840	Develop Final Plans and Specifications.
00/00/00	00/00/00	00/00/00	<b>00/00/00</b>		Submittal of final plans/proposal package to MDOT for final review.
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>	3870	Omissions/Errors Check (OEC) Meeting.
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>		Consultant's Plan Completion: Final Construction Plan/Proposal package with recommendations incorporated to MDOT (two weeks after OEC meeting).
00/00/00	<b>00/00/00</b>	00/00/00	<b>00/00/00</b>		Final Deliverables to MDOT.

**MONTHLY PROGRESS REPORT**

- A. Work accomplished during the previous month.
  - 1. During the last month, we completed the Final Right of Way plans and submitted them to Thomas Nelson, Jr. on 05/01/99.
- B. Anticipated work items for the upcoming month.
  - 1. Submit the Preliminary Plans and related material on 03/11/99.
  - 2. Attend the meeting regarding the Ameritech lines on the bridge, scheduled for 03/12/99.
- C. Real or anticipated problems on the project.
  - 1. We foresee no problems at this time.
- D. Update of previously approved detailed project schedule (attached), including explanations for any delays or changes.
  - 1. The design is falling behind schedule because we had problems resolving the geometries of the ramps in relation to the bridge. The Preliminary Plan submittal will be the only task affected by this delay because we will make up the lost time prior to submitting the Final Plans and Specifications.
- E. Items needed from MDOT.
  - 1. Prior to final Plan submittal, we will need the latest Special Provisions and Supplemental Specification checklists.
- F. Copy of Verbal Contact Records for the period (attached).
  - 1. Discussed bridge and ramp geometries with Tom Myers of MDOT Traffic and Safety Division on 07-24-95.



**SN: S02 – CS: 12345 – JN: 11111C**  
**M-111, from There Village Limits to north of That Road**  
Design Schedule as of 07/31/95

Original Authorized Start Date	Original Authorized Finish Date	(Anticipated) or <b>Actual</b> Start Dates	(Anticipated) Finish Dates	Task	Task Description
01/12/95	01/12/95	<b>01/12/95</b>	<b>01/12/95</b>	??	Initial project meeting.
01/29/95	01/29/95	<b>01/30/95</b>	<b>01/30/95</b>	3330	Conduct Design Survey.
02/17/95	04/10/95	<b>02/17/95</b>	<b>04/20/95</b>	3360	Prepare Base Plans.
02/29/95	02/29/95	<b>02/29/95</b>	<b>02/29/95</b>	3390	Develop Construction Zone Traffic Control Concepts.
03/12/95	03/13/95	<b>03/12/95</b>	(03/30/95)	3540	Develop Construction Zone Traffic Control Plans.
03/20/95	03/19/95	<b>03/25/95</b>	(03/30/95)	3551	Develop/Review Preliminary Traffic Operations Plan.
07/01/95	07/01/95	(07/01/95)	(07/01/95)	3590	The Plan Review Meeting.
07/11/95	08/11/95	(07/11/95)	(08/11/95)	3821	Complete/Review Traffic Signal Plan.
09/15/95	09/15/95	(09/15/95)	09/15/95)	3830	Complete Construction Zone Traffic Control Plan.
09/16/95	09/16/95	(09/16/95)	(09/16/95)	3840	Develop Final Plans and Specifications.
09/25/95	09/23/95	(09/25/95)	(09/25/95)	3870	Omissions/Errors Check (OEC) Meeting.

## VERBAL CONTACT RECORD

**Control Section** 12345  
**Job Number** 11111C  
**Structure Number** S02  
**Date** 07/31/95

Joe Engineer talked to Tom Myers and decided to use a 0.05'/ft super on ramp A leading into the bridge.

### **FOR YOUR INFORMATION**

For questions on specific tasks, refer to the P/PMS Task Manual located on the MDOT Bulletin Board System.

For assistance in accessing this manual, please contact one of following:

Dennis Kelley: (517) 373-4614

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